

# The Mining Journal

## AND ATMOSPHERIC RAILWAY GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 566.—VOL. XVI.]

LONDON: SATURDAY, JUNE 27, 1846.

[PRICE 6D.]

### THE MANOR OF NORTON CAINES, STAFFORDSHIRE.

**VALUABLE AND IMPORTANT COAL-FIELD**, comprising the MANOR OF NORTON CAINES, near Walsall, Staffordshire; also various parcels of LAND on NORTON HEATH.—TO BE SOLD, BY AUCTION, by Messrs. HOGGART & NORTON, at the Swan Hotel, at Wolverhampton, on Tuesday, the 7th day of July next, at Twelve o'clock, by direction of the surviving trustees under the will of the late T. Geldart, Esq.:

LOT 1.—TWO undivided THIRD PARTS of the extensive and important MINES of COAL and IRONSTONE, in the manor of Norton Caines, extending over nearly 900 acres of unwrought coal. The character of Brownhill's Deep Coal has been so long established, that no comment is necessary. This property is situated near Walsall, in the very heart of all the great manufacturing towns, and possesses the advantage of being within a short distance of the Wyrley and Essington Canal, so that a short line of rail from Norton Caines would place the coal in the barges of that company, and the charges for transit are very moderate. Also, the RIGHT of SPORTING over the MANOR OF NORTON CAINES, extending over about 1100 acres of land, abounding with grouse and game, with right of fishery, adjoining to the extensive preserves of the Marquis of Anglesey, Beadesert—a valuable sporting lot for a gentleman fond of shooting.

LOTS 2, 3, and 4, comprise about FORTY-EIGHT ACRES of FREEHOLD LAND on NORTON HEATH. May be viewed, and printed particulars had, 15 days prior to the sale, of P. A. Gordon, Esq., solicitor, Symonds's Inn, London, at the George, Walsall; of Mr. Haggall, mineral agent, Sand-pits, Birmingham; at the Swan, Wolverhampton; at the Mart; and of Hoggart and Norton, Old Broad-street, London.

### TO ENGINEERS, RAILWAY CONTRACTORS, AND OTHERS.

**MR. R. K. DAVIS** begs to announce, that he has received instructions from the company to SUBMIT TO PUBLIC COMPETITION, on Thursday, the 16th of July, at One o'clock, in Six Lots, at the Auction Mart, Bartholomew-lane, the whole of the PLANT and MATERIALS of the

### EXPERIMENTAL RAILWAY ON WIMBLEDON COMMON,

constructed to show the working of Prosser's Patent Guide Wheels: comprising—A LOCOMOTIVE-ENGINE and TENDER, in excellent working order, with 12-inch cylinders, 18-inch stroke, and adapted to the usual gauge of 4 ft. 8½ in. A second-class GARRIAGE and THREE LUGGAGE WAGGONS, all fitted with Prosser's Patent Guide Wheels; which, although constructed to run on a wooden rail, possess the singular advantage of working equally well on rails of any other description, with less friction than the common flange-wheel. Also, about 1400 cubic feet of 6-inch BEECH QUARTERING; and 3300 9-feet FIR SLEEPERS, 12 ft. by 6 in., and 10 ft. by 5 in.—now forming 1½ mile of the experimental railway; about SIX TONS of IRON RAILS and CHAINS; and the MATERIALS for forming the sheds, offices, and cottages.

May be viewed (any day) between the hours of Eight and dusk, and particulars obtained at the usual inns in the neighbourhood; at the premises, Wimbledon; at the offices of the company, 36, New Broad-street; and of Mr. R. K. Davis, 68, Mark-lane.

### SOUTH STAFFORDSHIRE.

**VALUABLE MINERAL PROPERTY, CRADLEY**, near STOURBRIDGE.—Messrs. OATES & PERRINS beg to announce to CAPITALISTS, and the PUBLIC generally, that they have received instructions to OFFER FOR SALE, a very valuable MINERAL PROPERTY, at Netherend and Cradley, in the immediate neighbourhood of Stourbridge. It will be divided into lots of suitable size, and will be offered at the Talbot Hotel, Stourbridge, on Friday, the 24th day of July, 1846, punctually at Five o'clock in the afternoon.

Printed particulars, with plans annexed, may be had on application to Messrs. Haynes and Son, solicitors, Halesowen; Mr. J. Mathews, Park Hall, Kidderminster; or of the auctioneers, Stourbridge.

**TO CAPITALISTS, DISPOSED TO GO INTO THE IRON TRADE**.—The ADVERTISER has a LONG LEASE of MINERAL PROPERTY, situated on the sea side, in GLAMORGANSHIRE, containing upwards of EIGHTY MILLIONS of TONS of workable COAL, and FORTY MILLIONS of TONS of IRONSTONE, all of excellent quality, for the manufacture of iron; and he wishes to NEGOTIATE with a PERSON, or COMPANY, to PUT UP WORKS that should produce, in the first year, from 5000 to 10,000 tons of pig-iron, with a profit of £12 per ton.—Pre-paid invoice addressed to Mr. S. Rogers, Nantyglo, Monmouthshire, duly attended to.—June 1846.

**A GENTLEMAN**, who is competent of INSPECTING RAILS, is desirous to ENGAGE himself to any RAILWAY COMPANY, who may have an occasion for a person in the South Wales iron district.—For card of address, apply to the Editor of the Mining Journal, 26, Fleet-st., London, enclosing a stamp.

**AGENCY IN IRELAND—IN THE BAR AND CAST-IRON TRADE, PATENT INVENTIONS, &c.**—A GENTLEMAN, for several years connected with the iron trade, having a central office in Dublin—at present agent in Ireland for a foreign house, visiting periodically the chief towns—would undertake an AGENCY, as above.—Letters, from principals only, addressed "Agent," care of Messrs. Fisher and Co., news and advertising agents, 13, Westmoreland-street, Dublin, will be duly attended to.

**TO MINING AND RAILWAY COMPANIES, &c.**—A GENTLEMAN, who has had upwards of 15 years' experience in mining and railway engineering, is in WANT of a SITUATION, as COLLIERY VIEWER, MINING or RAILWAY ENGINEER. First-rate references can be given, and will be required.—Letters (post-paid), addressed "Q. R. S.," Post-office, Newcastle-on-Tyne, will receive immediate attention.—N.B. The advertiser has no objections to go abroad.

**WANTED, FOR THE GLEN OSMOND MINE**, near ADELAIDE, SOUTH AUSTRALIA, a competent MINING CAPTAIN.—Any one inclined to undertake the situation, is requested to state his terms, and send his testimonials, which must be quite unexceptionable, both as regards skill and character, to John Offord, Esq., St. Austell, Cornwall.

**STEAM COAL**.—The BYNEA COLLIERY to LET, with immediate possession. It is situated close to the lines of the Llanelly and South Wales Railways; on the former of which the coals are carried for shipment to the Llanelly Dock—a distance short of three miles from the colliery. The Spitty Copper Works are contiguous, to which easy access might be had over the land of the proprietor of the colliery, if at any time those works should be again carried on. The BYNEA COAL has been highly approved of for STEAM PURPOSES and PATENT FUEL, and is in good demand for smiths', and other uses, particularly in the Dublin market.

The PLANT, consisting of a 40 and 20-horse power ENGINES, &c., to be taken on terms to be agreed upon.

For particulars (letters pre-paid) to Mr. B. Jones, solicitor, Llanelly; or to Mr. J. Glascombe, at the office of the Llanelly Railway and Dock Company, No. 9, Old Jewry Chambers, London.

**STEAM COAL—WITHOUT SMOKE**, as per experiments made at her Majesty's Dockyard, Woolwich.

**CAMERON'S COALBROOK STEAM COAL, AND SWANSEA AND LOUGHOR RAILWAY COMPANY**.—(Completely Registered and Incorporated.) OFFICES—2, MOORGATE-STREET, LONDON.

The directors are now prepared to supply steam ship companies, manufacturers, shippers, and others, with the company's steam coal, either at the company's wharves at Swansea, or in London. A statement, showing by comparative trial the superiority of this coal for steam purposes over every other, and a scale of prices, may be had on application at the company's offices here, or at their wharf at Swansea.—March 18, 1846.

**WHEAL ROSE TIN MINE**.—This MINE is situated in the parish of BUCKFASTLEIGH, near ASHBURTON: it is an extensive set—upwards of four miles square—and is admitted to be one of the richest mineral deposits in the kingdom: it is held at the low dues of 1-18th, for a term of 21 years. This mine is situated in a beautiful strata of ground, the soft decomposed granite adjoining the junction of kyllas strata; also, well situated for water for all machinery that may be required to work the mine effectually. An adit level has been driven on the course of the lode about 100 fathoms, the backs over which are worked away to a great extent for tin. It is supposed that this adit and workings were made by the old miners hundreds of years ago. There is a good course of tin going down in the bottom of the adit level, for many fathoms in length; also, there is an engine-shaft sunk 14 fathoms from surface, and the level is extended 40 fathoms east, by the side of the lode: the lode is cut through in many places, which are all productive for tin. It is a large strong lode, from four to six feet wide; about 15 fathoms east of the shaft, a good course of tin going down in the bottom of the 10 fathom level, from 10 to 12 inches wide—solid; also, 30 fathoms north of this lode, we have sunk a shaft four fathoms in depth, and discovered a lode two feet wide, composed of spar, pryan, and tin—the tinny part of the lode is eight inches wide—good saving work. This lode is quite a new discovery, and has not yet been proved at any depth; an adit can be brought on the lode at the depth of 12 fathoms. From the present appearance of this lode, it is evident there can be a great quantity of tin returned at a little expense; also, there is a good opportunity for driving adit levels on other lodes, to prove them, from 20 to 50 fathoms in depth. There are 12 productive tin lodes, with large workings at the surface in this set; also a new discovery of a copper lode, 2½ feet wide, composed of kindly gossan, spar, and mundle, and good stones of ore: there is no appearance of any workings having been commenced; or, in fact, of any thing ever having been done on this lode before—being quite a new discovery, and well situated for a mine.

I beg to inform those capitalists and others, who may be desirous of joining in such favourable undertakings, that I have SHARES to DISPOSE OF in each mine.

Applications, for further particulars, to be made to Mr. THOMAS BISHOP, Buckfastleigh, Devon.

**STEAM-ENGINES**.—From 8 to 20-horse power ENGINES ALWAYS IN STOCK.

Apply to Mr. CAPPER, ENGINE-MAKER and FOUNDER, BIRMINGHAM.

Price.....£14 per horse-power.

**ATMOSPHERIC RAILWAY**.—(Important to all concerned in the Formation and the Working of Railways).—FULL-SIZED WORKING MODELS OF CLARKE and VARLEY'S RESILIENT ATMOSPHERIC RAILWAY TRACTION TUBE will be at WORK on TUESDAYS, THURSDAYS, and SATURDAYS, between the hours of One and Four o'clock, at No. 8, JOHN-STREET, CAMBRIDGE HEATH, when the patentees will be happy to give every information required.

**HALLETTE'S ATMOSPHERIC RAILWAY AND CANAL PROPULSION COMPANY.**

Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the shareholders of this company will be HELD at the offices, Winchester-house, No. 52, Old Broad-street, on Thursday, the 9th of July next, at Two o'clock precisely.

By order of the board, EDWARD J. COLE, Secretary.

Winchester-house, 52, Old Broad-street, June 23, 1846.

**DUFFRYN LLYNVI and PORTHCAWL RAILWAY.**

Notice is hereby given, that a sufficient number of proprietors of the said railway, for the election of a committee for the ensuing year, not having been present, either in person or by proxy, at the General Annual Meeting of the said company, held at the Wyndham Arms Inn, at Bridgend, in the county of Glamorgan, on Monday, the 1st of June inst., or at another meeting of the said company, held at the same place, on the 15th of June inst., the same GENERAL MEETING stands ADJOURNED to Monday, the 29th of June inst.—on which day the said meeting will again be HELD, at the Wyndham Arms Inn, Bridgend, pro forma, and adjourned for business to a future day, of which notice will be given.

W. S. BRADLEY, Clerk.

**EDINBURGH, LEITH, AND GRANTON RAILWAY.**

The directors of this company are ready to RECEIVE TENDERS for LOANS, on Debenture Bonds, for sums of not less than £500, for a period of three years, at the rate of 4½ per cent., payable at the terms of Martinmas and Whitsunday, by the undermentioned bankers:—London—Messrs. Williams, Deacon, and Co., Birchin-lane.

Liverpool—Messrs. Leyland and Bullins.

Edinburgh—City of Glasgow Bank.

By order of the board, ALLEN GEO. FIELD, Secretary.

8, Abercromby-place, Edinburgh, June, 1846.

**LONDON AND OXFORD (late London, Oxford, Cheltenham, Gloucester, and Hereford Railway).**—The SHAREHOLDERS are informed, that a BALANCE-SHEET of the accounts of the company—prepared by the auditors—is now READY for their INSPECTION, at this office.—Shareholders who have not yet claimed the first instalment of 5s. per share, are earnestly requested to send in their scrip without delay, in order that the second instalment may be announced and paid, and the affairs of the company finally closed.

By order, E. CLAYTON, Secretary.

13, Old Jewry Chambers, London, June 25, 1846.

**NORTHUMBERLAND AND LANCASHIRE JUNCTION RAILWAY COMPANY.**—(REGISTERED PROVISIONALLY.)

The subscribers to this undertaking having failed to give the number of assents required by Parliament for carrying it on, the directors are proceeding—pursuant to the resolution passed at the general meeting of shareholders, held in London, on the 4th inst.—to wind it up, with all practicable dispatch.—Holders of scrip, and bankers' receipts, for deposits, are requested forthwith to forward the same, with their names and addresses—endorsed to the secretary, at the company's offices, Quay-side, Newcastle-upon-Tyne—who will acknowledge the receipt thereof.

After the expiration of seven days from the receipt of the scrip, the secretary will be prepared to PAY to the holders, or whom they shall, by writing, appoint to receive the same, TWENTY-FIVE SHILLINGS, in respect of each share upon which a deposit of 42s. has been paid; and at the same time, to deliver certificates (in lieu of the scrip and bankers' receipts) entitling the holders to a rateable proportion of the funds which shall remain, after payment of the said sum of 25s. per share, and after satisfying and discharging all liabilities and expenses.

By order of the directors, THOMAS M'QUIKE, Secretary.

Company's Offices, Quay-side, Newcastle-upon-Tyne, June 26, 1846.

**WEST FLANDERS RAILWAYS.—NOTICE OF CALL.**

Notice is hereby given, that the directors have made a further CALL of TWO POUNDS per share on each and every share in this undertaking, and that the same is made PAYABLE on the 12th day of June next. The proprietors are required to pay the same, on or before the 12th day of June next, to Messrs. Glyn, Hallifax, Mills, and Co., bankers, Lombard-street, London. Interest, at the rate of 5 per cent. per annum, will be charged on all sums remaining unpaid after the said 12th day of June; and if any call shall remain unpaid within one month from that date, the shares will become absolutely forfeited, according to the statutes of the company.

The proprietors are further informed, that, after the payment of this, the third instalment, is effected, they will be entitled to receive certificates, which may, at their option, be registered in their own names, or payable to bearer.

(Signed) W. P. RICHARDS, President.

(Signed) WILLIAM JESSE, Secretary.

11, King William-street, Mansion-house, London.

**PENNANT LEAD AND COPPER MINING COMPANY,**

DINAS MOWDDY, COUNTY MERIONETH.

NOW IN WORK ON THE "COST-BOOK" PRINCIPLE.

6000 shares.—Deposit £1 per share.

COMMITTEE OF MANAGEMENT.

Joseph Carrington Ridgway, Esq., Roehampton Lodge, Roehampton

B. Forrester Scott, Esq., Park-street, Westminster

Calverley Richard Bewicke, Esq., Barsham House, Beccles

Charles Dunbar Atkinson, Esq., Wakefield

William W. Mansell, Esq., Dorchester-place, Blandford-square.

CONSULTING ENGINEER.

Thomas Kitto, Esq., Junr., Civil Engineer and Mineral Surveyor, Redruth.

SOLICITORS.

Messrs. Pocock and Marston, 10, Norfolk-street, Strand.

BANKERS.

Messrs. Cocks, Biddulph, and Biddulph, London.

OFFICES—No. 4, SALISBURY-STREET, STRAND, LONDON.

PROSPECTUS.

Pennant Lead and Copper Mine sett extends over about 900 acres, and is situated in the centre of the lordship of Mowddyn, county Merioneth, which is admitted to be one of the richest mineral deposits in the kingdom. It is held under lease from the lord of the said manor, at the usual royalty of 1-10th, for a term of 21 years, renewable for the same period, on payment of a fine.

Pennant is in the immediate vicinity of the mines, on the same manor, of Craigwen, Foel Rhydd, and Cwarch, which are in course of most satisfactory working, and producing, while yields from 70 to 80 per cent. of lead, in addition to a considerable quantity of silver. These facts, of themselves, are sufficient to show the value of the property; and as nearly all the lodes on these setts cross Pennant, there is every reason to expect an equally favourable result; while the rapidly-increasing value of lead encourages the more extensive expenditure in the workings, which a company would do. It is a well-known fact, that the requirements of lead follow those of iron; and it is almost superfluous to allude to the extraordinary and increasing demand which exists for the latter.

consideration of the works done in developing the mine, and of the transfer to the company of the lease of Pennant, with all its rights and privileges, the present lease to have 600 paid-up shares, in addition to the sum of £500, which he has already paid for working and other expenses.

Applications for shares to be made to the purser, at the offices of the company, No. 4, Salisbury-street, Strand; to the solicitors, Messrs. Pocock and Marston, No. 10, Norfolk-street, Strand; or Charles Godwin, Esq., 2, Royal Exchange-buildings, where prospectuses, reports, maps, and every information may be obtained.

**JAMES LANE, SHARE AGENT,**

HALL OF COMMERCE, LONDON.

**JOHN PHILLIPS, MINE SURVEYOR AND REPORTER,**

POOL, ILLOGAN, CORNWALL.

OFFERS his SERVICES, by the promptest attention, to any business of INSPECTION and ADVICE.—Terms, One Guinea per day, besides consequent expenses.

**WILLIAM TRENEY, DEALER IN RAILWAY AND MINING SHARES.—ESTABLISHED TEN YEARS.**

OFFICES, No. 50, THREADNEEDLE-STREET, LONDON.

**PAUL RABEY, JUN., AND CO., MINE AND RAILWAY SHARE AGENTS.**

OFFICE—No. 12, COPTHALL-COURT, LONDON.

**WILLIAM FOX AND SON, No. 53, CASTLE-STREET,**

LIVERPOOL, have always on SALE PIG-IRON, RAILWAY BARS, CHAINS, and IRON of every description.—TIN PLATES, WIRE, &c.

**MESSRS. LAMOND, SMALE, and LAMOND'S PUBLIC SALE OF RAILWAY SHARES, &c.,** are HELD, at the Hall of Commerce, Threadneedle-street, every TUESDAY and FRIDAY, at One o'clock precisely.—Orders received until Four o'clock of the day prior to sale.—London, June 19, 1846.

**MINING OFFICES, REMOVED FROM 16, CORNHILL**

to 1, THREE KING COURT, LOMBARD-STREET.—Mr. R. TREDINICK (of Cornwall), having established PRACTICAL AGENTS and CORRESPONDENTS in every MINING DISTRICT, whereby he obtains early and accurate information respecting MINES, procures his services to capitalists and adventurers in the PURCHASE and DISPOSAL of SHARES.

**MINING PROPERTY.—CAPITALISTS** who are disposed to INVEST in CORNISH and FOREIGN MINES, will find the present opportunity very favourable for so doing. From large sums having been lately diverted from such investments for railway speculations, standard mines are now selling at prices that will pay the purchaser 20 per cent. per annum for his outlay. There are also other mines that are on the eve of paying dividends, which can be recommended with confidence.

Applications to be made to Mr. JAMES HEERON, mining agent, No. 3, Adam's-court, Broad-street, London.

**MINING OFFICES, No. 1, ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.**

Messrs. WATSON & CUELL have received instructions to PURCHASE SHARES in West Caradon, West Maria, Wheel Mary Ann, Trewallack, Stray Park, Condurrow, and Wheel Gill Mines; and have FOR SALE, SHARES in East Pool, Wheel Buckets, Trewallack, Marke Valley, South Caradon, Holmbush, Devonshire Great Consols, &c.

Mr. WATSON, F.G.S., having RETURNED from a MINING TOUR through the counties of CORNWALL and DEVON, will be happy to give any INFORMATION with regard to the MINES—some of which, at this moment, are paying 18 and 20 per cent. on market prices.

**ROYAL SANTIAGO MINING COMPANY.**—Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders will be HELD at the office of the company, on Wednesday, the 8th of July next. The chair will be taken at One o'clock precisely, when the directors will make their report, and consider a dividend.—38, Broad-street-buildings, June 18, 1846.

**CALLINGTON MINES COMPANY.**—The directors having met this day, pursuant to the Notice issued to the shareholders, for the purpose of ELECTING a DIRECTOR, in the room of P. Stainby, Esq., who had resigned his seat; and it appearing that only one shareholder—holding 10 shares in this company—had signified his dissent to Mr. Stainby's re-election, it was resolved unanimously:—

"That PETER STAINBY, Esq., be RE-ELECTED a DIRECTOR of this company."

44, Finsbury-square, June 15, 1846. (Signed) R. HODGSON, Chairman.

**SILVER VALLEY MINING COMPANY.**—At the First Annual General Meeting of the adventurers, held, pursuant to circular, at the offices of the company, 44, Finsbury-square, on Friday, the 12th day of June inst., it was resolved,--

Moved by Mr. Hayne, seconded by Mr. J. E. Goodhart, and carried unanimously, 1. That the reports and accounts now read be received, adopted, and entered in the cost-book and transfer book.

Moved by Mr. J. E. Goodhart, seconded by Mr. J. Smith, and carried unanimously, 2. That the thanks of the meeting be given to the chairman and the directors, for their able management of the affairs of the company.

R. HODGSON, Chairman.

**VENTON GIMPS MINING COMPANY.**

1000 shares (on the cost-book system.)

PROVISIONAL COMMITTEE.

JAMES HAY, Esq.

A. L. MOCATT, Esq.

GEORGE MACKAY, Esq.

Forms of application for shares, and full particulars, to be obtained at the office, No. 4, Austinfriars; or of Mr. Richard Thomas, mining agent, 5, George-yard, Lombard-street, London, June 3, 1846.

**CONTRACTORS WANTED.—WANTED, by the CLYDE TRUSTEES, CONTRACTORS for BUILDING about TWO THOUSAND TWO HUNDRED and EIGHTY LINEAL FEET of QUAY WALL, &c., in continuation westward of the quay walls on the south side of the harbour of Glasgow, agreeably to the lines delineated on the Parliamentary plans of the river and harbour.**

The detailed plans and specifications of the works, with the forms of tender, &c., will be seen at the office of Messrs. Walker and Burgess, civil engineers, Great George-street, Westminster, London; or in the hands of Mr. Bremner, resident engineer of the river and harbour, on and after the 6th of July next; and sealed tenders, for the execution of the works, to be lodged at the treasurer's office, 16, Robertson-street, Glasgow, on or before the 20th of July next.

Clyde Trustees' Chambers, Glasgow, June 8, 1846.

**IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.**

Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their IMPROVED ELASTIC METALLIC PISTONS.

The PRINCIPAL FEATURE and ADVANTAGE of THIS IMPROVEMENT is its great ELASTICITY and SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.

2. Its extreme SIMPLICITY and LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.

3. It takes the LEAST possible SPACE, and is well adapted for air and water-pumps, as it allows of a larger water way.

Messrs. W. & C. MATHER feel confident that it is the BEST ELASTIC METALLIC PISTON yet known, for the above reasons.

Models may be seen at the Salford Iron-Works, Manchester; at W. Barker's, engineer, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

**NOTICE TO THE MANAGERS OF MINING COMPANIES, SMELTING WORKS, &c.**

Mr. MITCHELL (late Mitchell and Field) begs to announce, that ASSAYS and ANALYSES of all descriptions of ORES, MINERALS, and FURNACE PRODUCTS, are conducted at his LABORATORY, 23, HAWLEY-ROAD, KENTISH TOWN, to which direction all communications are to be addressed.

N.B.—Instruction in all branches of assaying and mineral analysis as usual.

Now ready, in 1 vol., post 8vo., price 10s. 6d.,

**MANUAL OF PRACTICAL ASSAYING:** intended for the USE OF METALLURGISTS, CAPTAINS OF MINES, and ASSAYERS IN GENERAL, with a copious Table, for the purpose of ascertaining, in assays of gold and silver, the precise amount, in ounces, pennyweights, and grains, of noble metal contained in one ton of ore, from a given quantity.

By JOHN MITCHELL, Member of the Chemical Society.

London: H. Baillière, publisher, 219, Regent-street.

**TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GRADE for MACHINERY and AXLES of every description.**—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.

References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London.

## MANUFACTURERS' MUTUAL PROTECTION SOCIETY

TRAFFORD.  
ROBERT ALEXANDER GRAY, Esq., 29, St. Swinburn's-lane.  
JOHN RATLIFF, Esq., Wood-street, Cheap-side.  
JOSEPH TRITTON, Esq., Lombard-street.  
BANKERS.  
Messrs. Barclay, Bevan, Tritton, and Co., London.

SOLICITORS.  
Messrs. Vallance and Vallance, 20, Essex-street, Strand, London.  
This society is established for the purpose of protecting Merchants and Manufacturers from the fraudulent use and imitation of their names, trade-marks, and manufactures. The courts of law in this country, as also those of the United States and France, afford to the British manufacturer the fullest protection. Experience has, however, shown that there are hundreds of merchants and manufacturers who are suffering from a fraudulent imitation of their names, manufactures, and trade-marks, but who do not feel disposed to enter into litigation, and fight individually a battle which is really for the benefit of all manufacturers.

For a small annual subscription, and without any further charges, or incurring any further liability or expense, each member has the opportunity of obtaining, free from all charge, opinions as to his rights in respect of any fraudulent imitation of his name, trade-marks, or manufactures; and he is also entitled to put the society in motion against any person who may counterfeits his name or trade-marks, whether in the United Kingdom, on the continent of Europe, or in any part of the British dominions, or the United States. The whole cost of such proceedings is borne by the funds of the society.

The funds of the society are vested in the trustees, and the affairs are under the control of the committee of management.

Prospectuses, and any further information, may be obtained on application, by letter, addressed to the secretary; or, personally, at the office of the society, No. 20, Essex-street, Strand, London.

## PATENT VULCANISED INDIA RUBBER.

CHARLES MACINTOSH & CO.  
Beg to inform the Public that they are the Patentees and sole Manufacturers of the above vulcanised India Rubber. The distinguishing properties of the Patent Vulcanised India Rubber are, its uniform elasticity in various temperatures; its not becoming hard on exposure to extreme cold, nor liable to injury by contact with heat. Its strength is greater than that of native caoutchouc; it is indissoluble in essential oils; it resists the effects of oil and grease in different degrees, according to the purposes for which it is manufactured.

Among the various useful applications of the Patent Vulcanised India Rubber, may be enumerated—

WASHERS or RINGS for joints in steam, and water-pipes, and for valves for steam-engines; by which labour is economised, and the joints more effectually made, than by any other mode.

ELASTIC BANDS, for holding together bundles of letters, papers, &c.

IN ARTICLES OF DRESS—Springs for waistcoat-backs and trousers, straps for trousers, brace-ends, garters, &c.

IN CALICO-PRINTING, the substitute for blanket has been found to produce a much finer impression than the woolen hitherto used, and with considerably less pressure; hence a saving in power, and wear of lapping.

COVERS for furnishing rollers (in lieu of flannel), are perfect for their purpose; and, as the India Rubber does not absorb moisture, they can be easily cleansed, and no colour need be wasted.

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SPRINGS for railway and other vans and carriages, and for buffers and drags.

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## Mining Correspondence.

## ENGLISH MINES.

BARRISTOWN.—The lode in the 18th level east is 2 ft. wide, producing about 1½ ton per fm.; the lode in the 18th level west is 2 ft. wide, producing over 2 tons per fm. The east and west of the winze, sinking under the 12th level, looks well, producing over 2 tons per fm. each; the lode in the adit east is about 18 in. wide, producing good stones of ore. The pitches through the mine are looking well. We are expecting a vessel daily to take a cargo of silver-lead ore. We are exerting the utmost of our ability to complete the erection of flat-rods to Nangle's shaft. We got a good stone of ore this week in sinking the flat-rod shaft.—T. ANGOVE: June 19.

BEDFORD UNITED.—At Wheal Marquis, very little has been done in the 80 fm. level east since my last, the water having been turned out of the canal. The lode in the 70 fm. level east is 2 ft. wide, producing saving work; and in the stopes, in the bottom of this level, the lode is 2 ft. wide, and worth 20s. per fm. The lode in the 58 fm. level east is 18 in. wide, and unproductive. At Ding Dong, the lode in the 24 fm. level west is 2½ ft. wide, composed of spar, munda, and tin. At Wheal Tavistock, there is no alteration of importance in either of the levels driving on this lode. The lode in the south engine-shaft is still 9 ft. wide, composed of gossan, spar, and ore. The lode in the adit level is 15 in. wide, spar and munda.—JAMES PHILLIPS: June 23.

CALLINGTON.—Johnson's engine-shaft is now down 5½ fms. below the 112 fm. level; the ground is not quite so favourable for sinking at this level; driving north, the lode is improving, the back will set at a moderate tribute; in the south end, the lode is much disordered, being mixed with fragments of the country, producing silver-lead ore; in driving the next 5 fms. we calculate meeting with a good shot of ore gone down in the level above; we also expect this will drain the winze, which we are now prevented from sinking by the quickness of water. In the 100 fm. level north the lode is split in branches, producing silver-lead ore; in the south end, we are opening good tribute ground. In the 90 fm. level, both north and south, the lode continues good; the backs will set at 7s. in the 11, on the value of the lead; the same may be said of the lode in the winze, sinking below this level. In the 80 fm. level, driving north, we are opening tribute ground. At the north mine, we have nothing new to remark on.—J. T. PHILLIPS: June 22.

CONSOLIDATED TRETOIL.—The lode in Henwood's shaft, sinking under the 70 fm. level, is 15 in. wide, saving work; in the 70 fm. level west the lode is 1 ft. wide, unproductive; in the rise, in the back of the 70 east, the lode is 1 ft. wide, ore throughout. In the 60 fm. level, west of Williams's shaft, the lode is 9 in. wide, producing a small quantity of ore; the lode in the winze, in the bottom of the 60 fm. level, west of Henwood's shaft, is 18 in. wide, producing saving work; in the 60 fm. level, east of Henwood's shaft, the lode is small and unproductive. In the 50, east of Henwood's shaft, the lode is 9 in. wide, opening tribute ground; in the 50, east of John's engine-shaft, the lode is 15 in. wide, producing good stones of ore, and is a kindly lode. Tregrill's lode, at the 40 fm. level, east of Russell's shaft, is 6 in. wide, producing some stones of ore.—June 22.

EAST TAMAR CONSOLS.—At Whitsun, at the 46 fm. level, south of Hitchin's shaft, the lode is 20 in. wide, good work; at the 46 fm. level, north of ditto, the lode is 18 in. wide, saving work. At the 36 fm. level, north of ditto, the lode is 2 ft. wide, very kindly. The tributaries in this part of the mine are getting wages. At Fuzhelling, the engine was got in regular course of working on Saturday last; it is working very steady. The 30 fm. level south is looking very promising, the lode is 15 in. wide, good work.—B. ROBINS: June 22.

GREAT WHEEL MARTHA.—The lode in the 60 fm. level east is small and unproductive. At the new mine, the lode in the 20 fm. level west is 8 ft. wide, consisting of munda and copper ore in capel, with veins of quartz and decomposing felspar; the eastern end has been driven through the rock on the upper wall of the lode, during the last fortnight; in cutting into this wall yesterday, we discovered that the lode produced saving work, and we, consequently, set the men to drive through it; when this is accomplished, you shall be duly apprised of it; we have never seen any part of the lode, east of the cross-cut, look so promising, or containing near so much copper, as it does at this point; we shall be glad to find, and to report to you, that it is a continuous shoot, and not merely a few stones of ore. The lode in the 10 fm. level west is large, and although it contains stones of ore, it is, nevertheless, disordered by a small felspathic cross-course, which we have intersected during the week; the pitch in the back of this level has been very poor, and we have, therefore, suspended working that part for the present, and have commenced rising where the water contained most copper in solution, and we are glad to say the lode is opening favourably, producing good work. The new engine-shaft is sunk 10 fms. below the deep adit level, and the men have 6 ft. more to sink to complete their bargain; the ground continues as favourable for sinking as we would wish to see it. We shall sample another small parcel of copper ore on Friday next.—J. PRINCE; T. PENALUNA: June 20.

GUNNIS LAKE.—At Chilworth, the lode in Bailey's engine-shaft (8 fms. 5 ft. 6 in. under the adit level) is 3 ft. wide, composed of gossan and spar, with spots of copper ore in places, altogether as promising a lode as can be seen. In the 10 fm. level east, western shaft, the lode is 2 ft. wide; and in this level west 3 ft. wide, composed of pryan and spar, with stones of tin occasionally.—W. RICHARDS: June 23.

HANSON.—At Tresa, our engine-shaft is suspended for the present, and the summen are driving the 22 fm. level, east of engine-shaft, on Stainsby's lode; the lode is 2 ft. wide, in which there is a branch of ore 6 in. wide—this end never looked so well before. In the bottom of the 12 fm. level, east of engine-shaft, on caunter lode, there is a good branch of ore 8 in. wide. At Hanson the materials are all drawn to surface.—Z. WILLIAMS: June 22.

HARROWBARROW CONSOLS.—We are still sinking Brewer shaft, and are about 10 fms. under deep adit; the water is much as was stated in last week's report; the lode is about 1½ ft. wide—a good looking lode, but not rich.—B. COOKE: June 25.

HARROWBARROW OLD MINE.—The 33 fm. level west is producing some good stones of copper ore; I think we have not many fathoms to drive west, before we get under grey ground, and shall have a good course of ore. The shaftmen are still engaged in altering the pitwork. The tin shaft is sunk about 10 ft.; we are getting on well in driving to get under the said shaft, and have commenced driving on the tin lode, and have a good lode.—B. COOKE: June 25.

HAWKMOOR.—The lode in the 15 fm. level, east of Hitchin's shaft, is about 2½ ft. wide, producing good stones of ore.—P. RICHARDS: June 23.

HOLMBUSH.—Hitchin's shaft is sunk about 3 fms. below the 120 fm. level, the ground is still favourable for sinking; we intend to sink 8 ft. below this level previous to cutting trip plat—viz.: 6 ft. for the plat, and 2 ft. for the fork. In the 120 fm. level, west of Hitchin's shaft, the cross-course is hard and troublesome for driving through; there has been a little increase of water in the past week. In the 110 fm. level, west of Hitchin's shaft, the lode is 10 in. wide, and worth 12s. per fm. In the 100 fm. level, west of ditto (on the north part), the lode is 12 in. wide, composed of spar, munda, and stones of ore; in the 100 fm. level, west of lead lode (on the south part), the lode is 15 in. wide, composed of spar, munda, and spots of ore; at this level, driving south, the lead lode is 4 ft. wide, composed of soft spar, pryan, and stones of lead; in the same level, driving north, the lead lode is 2 ft. wide, composed of flookan and spar. In the 90 fm. level, west of Hitchin's shaft (on the north part), the lode is 12 in. wide, composed of spar, munda, and occasional stones of ore. The rise in the back of the 80 fm. level is without alteration. In the 62 fm. level south the lead lode is 2½ ft. wide, composed of flookan, spar, and spots of lead.—W. LEAN: June 23.

LEWIS.—At Wheal Nutt engine-shaft, the lode in the 60 fm. level east is 1 ft. wide, producing some tin; the lode in the 60 fm. level west is 18 inches wide, producing some good spots of yellow ore; this lode has a promising appearance. The lode in the 50 fm. level east is 2 ft. wide, producing some tin; the lode in the 50 fm. level west is 2 ft. wide, producing some tin, and spots of yellow ore. The lode in the 40 fm. level east is 14 inches wide, worth 80s. per fm. for tin; the lode in the 40 fm. level west is 8 feet wide, producing some tin, and spots of yellow ore, a very kindly lode; the lode in the 30 and west is 2 ft. wide, worth 35s. per fm. for tin; we have driven a cross-cut south at this level, and cut the middle lode; we hope to open some ground here, which will work at tribute. The lode in the 20 fm. level east is 2½ ft. wide, working with the back at 10s. tribute. Scadden's lode, west of the cross-cut is 8 in. wide; the tributaries working on this lode are getting wages in their tribute; we are continuing to drive the cross-cut north at this level in a soft strata of ground.—S. S. NOEL; P. EDDY: June 20.

SOUTH WHEEL TRELAWEY.—Sobey's lode is 20 in. wide, composed of gossan, spar, and soft white kyllas, with specks of lead in it; the men have driven within the last fortnight 5 fms. In the south adit, driving east, the ground is more favourable for driving than it was on setting-day.

TAMAR SILVER-LEAD.—The engine-shaft is sunk 9 fms. 3 ft. below the 145 fm. level; the ground is still favourable for sinking. In the 145 fm. level the lode is 15 in. wide, composed of capel, munda, and ore, coarse in quality. In the 135 fm. level the lode is 2½ ft. wide, 18 in. of which is good saving work; in the winze, sinking in the bottom of the 135 fm. level, north of the shaft, the lode is 18 in. wide, 1 ft. of which is work of a promising character. In the 125 fm. level the lode is 2 ft. wide, good saving work. In the 115 fm. level the lode is 1 ft. wide, chiefly composed of can and ore, but not rich. We have holed the two winzes (one at the 105, the other at the 125), which have given great satisfaction. At the north mine, the lode in the 60 and is split in two branches, at present poor.—JAMES SPRAGUE: June 22.

TAVY CONSOLS.—At Hocklake, we have driven the shallow adit, on the copper lode, about 35 fms., at which point we cut a lead lode, about 1½ ft. wide; the lead lode is composed of pryan, white spar, and munda, with a branch of

lead in it, about 2 in. wide; this lode has the copper lode about 6 ft., where it appears to be gone off in its regular westerly course, for about 18 in. wide; it is composed of yellow copper ore and munda, good saving work; the west of the cross-course appears to be much wetter than the east. We are getting on with the cutting down of the whim-shaft very well. At Little Duke, the tributaries are rising some good lead and copper ore.—B. COOKE: June 25.

TINCROFT.—Since my last report, our summen in the north mine have been employed securing a bad piece of ground in the whim shaft—so that but little has been done in the bottom of the shaft since that time; they will, however, resume sinking in a day or two. The lode in the 90 east has improved since my last; it will now produce about 1 ton of ore per fm., worth 9s. per ton. The winze, below the 80, to come down on this end, will produce 1½ ton of ore per fm., worth 7s. per ton. The lode in the 90 west is 5 ft. wide, ore throughout, with a great deal of munda, very kindly for copper; below some branches, containing copper ore, have recently passed through the engine-shaft, underlying south, which will fall in with, and I have no doubt improve, the lode. The lode in the 80 east is 3 ft. wide, producing some ore, but not rich; the west end, same level, is at present unproductive. The lode in the 70 east is 4 ft. wide, producing good work for tin, with occasional stones of ore; for tin and copper, we calculate, it is worth 12s. per fm.; the 70 west is producing some ore. The lode in the 60 east is 3 ft. wide, yielding tinstuff; the same level west is producing some copper ore, and very kindly. At the 50 east, we are driving north through the lode, which is producing some tin, and kindly; at the 50 west, we are driving a cross-cut south, to cut the south lode, which, in a pitch in the bottom of the 40 fm. level, is producing good work for copper ore. At Palmer's, the lode in the 70 west is 2½ ft. wide—will produce 2 tons of ore per fm., worth 5s. per ton; the lode in the winze, still further west than this end, sinking below the 60 fm. level, is 6 ft. wide, working by six men at 6s. tribute, and I believe the men are making fair wages; the 60 west is at present unproductive; our pitches in this part of the mine are producing fair quality ore. In the south mine (which is at present by far the best part of the mines), the lode in the engine-shaft is 3 ft. wide, worth full 60s. per fm.; the west end, at the 152, is worth about 20s. per fm. The 142 east is worth about 15s. per fm. The 120 east is worth 12s. per fm. The 110 is worth 10s. per fm.; beyond this end, we have a good lode in the bottom of the 100 fm. level. I expect we shall sell about 25 tons of tin to-morrow; and, but for an accident to our calciner, we should have had several tons more by this time; we are getting on very well sinking the new shaft. I expect the engine-house, at Wheal Providence, will be completed in a fortnight; this we are pushing on as fast as possible, so as to do all we can towards clearing the adit in the summer season.—WILLIAM PAUL: June 22.

TRELEIGH CONSOLS.—In the 100, east of Christie, the lode is 2 ft. wide with a branch of ore on the south part, the lode is 4 ft. per fm.; the 100, west of ditto, is driving in the cross-course. In the 90, east of ditto, the lode is 2½ ft. wide, worth 18s. per fm.; we have 17 fms. more to the boundary; in the 90, west of ditto, the lode is 1 ft. wide, but little ore; in the 90, east of Garden's, the lode is 3½ ft. wide, worth 45s. per fm.; in the 90, west of ditto, the lode is 3 ft. wide, worth 20s. per fm. In the 80, west of Good Fortune, the lode is 2 ft. wide, no mineral. In the 70, west of ditto, the lode is 3½ ft. wide, producing good stones of ore, very kindly. In the 60, west of Symons's, the lode is 18 in. wide, with stones of ore. In the 50 cross-cut north the ground is much as usual; in the winze, below the 50 west, the lode is 2½ ft. wide, worth 8s. per fm.; in the 50, west of Symons's, the lode is 2½ ft. wide, worth 7s. per fm. In the adit, west of ditto, the lode is 2½ ft. wide, producing good stones of ore. West shaft is below the shallow adit; the water in sinking is but little, and hope to be able to continue to sink.—WILLIAM SYMONS: June 20.

UNITED HILLS.—In the 90 fm. level, eastern end, the lode is 3½ ft. wide, 2 ft. good ore; in the western end the lode is 3 ft. wide, 2 ft. good ore; these ends are very wet and troublesome for driving. In the 80 fm. level, in the eastern end, the lode is 4½ ft. wide, producing ore throughout, of low quality; in the rise the ground continues hard. In the 70 fm. level, eastern end, the lode is 2 ft. wide, producing stones of ore, but not rich. West of James's the lode is 2 ft. wide, unproductive. We are getting on with sinking the diagonal shaft as well as we can expect. In the 60 fm. level the lode in the rise, in the back of this level, east of eastern shaft, is 2½ ft. wide, 18 in. ore of fair quality. West of Harper's winze the lode is 3 ft. wide, ore throughout, of low quality. In the end of the 50 fm. level the ground has a little improved for driving during the past week. At Wheal Charles, in the 50 fm. level, east of Gibson's, the lode is 2 ft. wide, with stones of ore. In the 40 fm. level, ditto, the lode is 18 in. wide, ore throughout, of average quality. At Wheal Sparrow, in the 40 fm. level, west of Richards's, the lode is 18 in. wide, poor. In the 30 fm. level, ditto, the lode is 18 in. wide, producing ore throughout, of average quality.—T. TREVENEN; R. WILLIAMS: June 23.

WEST WHEEL JEWEL.—In the 115 fm. level east, on Wheal Jewel lode, the lode is 8 in. wide, unproductive. In the 100 fm. level west, on ditto, the lode is 9 in. wide, containing stones of copper. In the 85 fm. level west, on ditto, the lode is 2 ft. wide, worth 14s. per fm.; in the winze, sinking below this level, east of cross-course, the lode is 1 ft. wide, worth 6s. per fm. The 12 fm. level east, on Tolcarne tin lode, is containing occasional stones of tin; in the 12 fm. level west, on ditto, the lode is 1 ft. wide, containing stones of tin.—S. LEAN; R. JONES: June 22.

WHEEL AGNES.—The men in the shaft have cut a large stream of water; I thought best to suspend doing any more in the shaft until the adit is brought in to take off the water, which will save expense. I have put the men to work on the lode in the end of the shaft, where there is a good course of silver-lead ore; it appears to be very good going south in the hill, which looks very kindly. We have commenced dressing to-day; and I hope, in a short time, to have several tons of silver-lead ore for the market.—B. ROBINS: June 22.

WHEEL CONCORD.—The lode at the east of the air-shaft is 2½ ft. wide, of good saving work all through, and, from all appearance, likely to continue; this lode is now working on tribute and tutwork—3s. in the 12 ft. for lead, and 15s. per fm. for driving. The pitch at the back of the 12 fm. level, at the air-shaft, is still looking well—the lode being 2 ft. wide, of good work—now working at 8s. 6d. in the 14 ft. for lead. We hope soon to see the 38 fm. and 50 fm. levels, where I anticipate we shall meet with some good bunches of ore; and, at the same time, I shall be able to extend the levels, and make more discoveries.—B. ROBINS: June 24.

WHEEL MEXICO.—Since the last report we have sunk a winze, about 9 ft. below the adit, on the copper lode, at East Cornwall, where the lode is about 16 in. wide, composed of munda, peach, spar, a little jack, and good stones of copper ore; but, in consequence of the deficiency of top-water, we have suspended operations on that part for the present; but, should the top-water increase, we hope to resume our working at the 5 fm. level, to drive east, where we anticipate, from the indications at present, we shall find the lode improving. We are now sinking a winze below the adit level, at Wheal Mexico; on the course of the silver lode, about 3½ fms. west of the western cross-course, which winze is now about 2½ fms. deep at present, and the lode about 14 in. wide, where we have a little saving work for silver; the lode is composed of flookan, felspar, and carbonate of iron, accompanied with a little munda. We have also a small quantity of silver ore prepared for the market.—W. KNOTT.

WHEEL TRELAWEY.—The engine-shaft is sunk 4 fms. below the 82 fm. level. The lode in the 82 fm. level, south of the shaft, is 8 ft. wide, and worth 25s. per fm.; in the same level north, the lode is 4 ft. wide, and worth 28s. per fm. The lode in the 22 fm. level north is 3½ ft. wide, and worth 20s. per fm. In a winze, sinking below the 12 fm. level north, the lode is 2½ ft. wide, and worth 15s. per fm. Our stopes are not looking so well as they have hitherto. We commenced sinking a new engine-shaft this day; we have also received tenders for the supply of a 50-inch cylinder steam-engine, to be delivered in 15 weeks on the mine; that of Mr. John Hodge, of St. Austell (1500l. being the lowest), is accepted.—P. CLYMO, Jun.: June 23.

WHEEL WALTER.—The London shaft is 10½ fms. deep; the ground very free, composed of black slippy kyllas, with beautiful veins of sugary spar—these veins producing a little yellow ore. The ground being free, we are obliged to put in close timber; and, as the water is easy, our price is only 6s. per fathom.—J. OPIE: June 23.

cost is to be defrayed by the men, and we may expect every barrel of ore produced in this manner will leave a clear profit of \$1½ or \$2 per barrel, after deducting the smelting charges and transport.

**Ore Dressing.**—The picking commenced about 10 days ago, and the stamps and separators were put to work in the early part of this week; it has snowed every day since, and our progress is, in consequence, slow; so far, however, as we have gone, we find no cause to complain, either of the quality of the halvan, or the produce of clean ore. As the month does not close before to-morrow, I am unable to forward the usual monthly estimate before next post. No returns will be made to the smelting-house before the middle or latter part of July, when we hope the greater part of the coal ships expected will be dispatched.—S. H. THOMAS.

**IMPERIAL BRAZILIAN MINES.**—The following are the produce of the gold workings, from the 18th to the 22d Jan.:—7 lbs. 5 oz. 3 dwts.

**NATIONAL BRAZILIAN MINES.**—Cocac, April 23.—Exceeding good progress has been made in sinking the winze from the Bandeira level to Oxenford's stopes below; the winze is now being sunk quite perpendicularly through the lode, and the underlie is now greater than it was 10 days ago; we are naturally crossing the floors of the lode as we go down. I took a sample from one of the floors cut through last week, and pounded it in the mortar, and it produced exceedingly well. The tramroad is laid down to Waller's stopes, with the exception of the iron, which is not quite in readiness. I hope we shall, in a few days, commence stamping the stone from the stopes.

**ST. JOHN DEL REY MINE.**—Morro Velho, April 18th.—Stamp heads working during 18 days, 6674. The supply of ore has been ample throughout the month, and Capt. Trewar reports, that his works are going on satisfactorily in every way. The syphon pipes are fairly under way. The supporting walls on each side of the brook are built, and four English smiths are occupied rivetting the pieces of pipe together.

**PENNANT LEAD AND COPPER MINING COMPANY.**—We noticed, in the *Mining Journal* of the 6th inst., the great facilities which many districts in North Wales offer for mining enterprise, and among them particularly the Pennant sett, as being in the immediate locality, and surrounded by Craigwen, Foel Rhyd, Cowarch, and other highly productive mines. We are happy to observe, that every day's progress and investigation tends to strengthen the sanguine hopes entertained in the first instance by the adventurers, who are likely eventually to reap a rich harvest from their enterprise. In a recent report made by Mr. R. Kitto, jun., after a careful survey of the entire sett, which extends over 900 acres, he says:—"The deep adit level cross-cut, north and west, is driven 44 fms., the ground at present is rather hard for driving; I expect in about 5 fms. driving we shall have a change for the better, as we shall be within 5 fms. cutting the first lode—making altogether about 10 fms. (from the present end) to the first lode. To the second lode is about 25 fms.; that lode is 4 ft. wide, of soft spar, prinn, gossan, flookan, &c., and also soft killas about the lode, of very promising nature. I have traced these lodes across the mountain on the eastern side; there I find the lodes equally as large and kindly, much of the same character, with several small lodes or branches intersecting those lodes, and, no doubt, will very much improve them in producing large quantities of silver-lead ores, of very rich quality. I assure you the more I go over this Pennant sett, the better satisfied I am of its beneficial result. I shall not hesitate a single moment in stating to you, that this sett is large enough for at least six setts; there are three of them I would strongly recommend you to commence working immediately. There is a good road made to come up to the mine, with all kinds of material that may be wanted from time to time. I beg, do not lose sight of the remarks I have made respecting the eastern side of the mountain. Some of these lodes are Cowarch Mine lodes. I would advise you not to have this part of the sett stand over another week before you put men to work to drive a deep adit level on the course of one of these large lodes. You will also be pleased to bear in mind, it is only about 2½ miles apart, on the course of these lodes, from where they are working, and the part I have been stating to you the character of. Both ends of the sett are looking well, and no doubt but what the middle will be much better." This fully confirms all the previous reports, and there is every indication that the mines will prove highly productive, and remunerative to the proprietors.

[FROM CORRESPONDENTS.]

**BACHELORS' HALL.**—Errata.—It was erroneously stated, in last week's Journal, that the adit was 34 ft. wide, and the lode 22 ft.; it should have been—adit 3 ft. wide, and lode 2½ ft. wide.

**CARN BREA MINES.**—The fifth dividend of 2000*l.* (or 2*l.* per share), has been declared by the directors, payable on and after this day (Saturday).

**CREBOR CONSOLS.**—The side or parallel lode in this sett is not yet reached at the 24 fm. level; but whether this arises from the underlie of the lode being more perpendicular than was expected—or whether the lode has been actually passed by, being wholly or partially concealed by the cross-course (as is sometimes the case), are points not yet decided; at any rate, if the lode should turn out to be rich (on which, of course, the speculation hinges), the deep shaft, which is sunk below the 100, will enable the adventurers to return an immense body of copper in a comparatively short period. This lode, which they are endeavouring to cut at the 40, is (as we before observed) a parallel lode; and the opinion both of miners and geologists, on this point, is, that a parallel lode, near and in the same country (i. e., the same kind of rock), will probably be found rich in that part which is opposite to the rich part of the first lode; or, in miners' phraseology, there is found "against" ore. There are, however, some few exceptions to this rule.

**DRAKE WALLS** has just sold 12 tons of tin, whilst some good work is brought up almost every day. Altogether, this speculation is such a one as is very likely to last, and, perhaps, improve in depth.

**KIRKCUDBRIGHTSHIRE MINING COMPANY.**—A discovery (which promises to be of some importance) has been made at Cairnmore, a lead mine belonging to this company. Cairnmore immediately adjoins the celebrated Black Craig Mine, which has left several thousand pounds profit; the River Penluse also divides the two mines. The Kirkcudbrightshire Company have an extent of 2½ miles in Cairnmore, in the Black Craig lode, which has been cut in three places in the sett, and is productive in each. The lode in the first shaft is 4 ft. wide, 1 ft. of it contains jack and spar, spotted with lead; but the latter has not increased lately, though there is reason to expect it will. In the second shaft, which is now called Crouch's shaft, we cannot say how wide the lode is, as it is inconvenient to carry the whole width in a shaft; there is 4 ft. of it in the sinking, and from its nature, lead is daily expected, as the copper is decreasing; at 20 fms. deep we shall cross-cut this lode. In the third shaft, which is now called Steward's, the lode is 3 ft. wide, containing a branch of solid lead, from 2 to 6 in. wide, and appears pretty regular in its direction. At Cully Mine, the lode is from 5 to 6 ft. wide in the adit end; it contains more gossan than has been seen in it before, and some detached stones of copper.

**WEST WHEAL MARIA** is progressing favourably, and, from its proximity to the great mine, is almost certain to return large quantities of ore; but, of course, time must be allowed for sinking the shaft, and driving the level and cross-cuts, to prove the various lodes. The shareholders may congratulate themselves in having half of their work already done for them—which circumstance alone, independent of the prospects, ought to act as a stimulus to their exertions.

**WHEAL ALBERT MINE.**—This mine is situated in the parish of Plympton St. Mary, in the county of Devon, a short distance to the north of the very ancient Bottle Hill Tin and Copper Mine, and about seven miles from Plymouth. The sett is a very extensive one, many lodes running parallel east and west; it is held for a term of 21 years, from G. Strode, Esq., at 1-15th dues. In resuming the works of the ancients, which are very extensive, at a depth of 11 fms., several very rich branches of pure grain tin were discovered, underlying north, and about 2 fms. south of the north lode, and, according to their inclination, are likely to intersect it. A shaft is now being sunk, in order to intersect the north lode, at a depth of 40 fms., which is now down about 20 fms. From the nature of the strata in which these lodes and branches are embedded—that is, killas—and within 200 fms. of granite, in an easterly direction, there is every probability of ultimate success, as the appearances invariably tend to assure the practical miner of this, as the natural result, if effectually prosecuted. The mine is divided into 256 shares, and a call of 80*s.* per share has been paid; a water-engine has been purchased, and other necessary materials, for giving the mine a proper trial, with the exception of pumps, and paid for out of the first call—about 300*l.* of which has been spent. The management of the mine is vested in Mr. Hitchens, of Devon Great Consols Mine, who is also the greatest shareholder.

**WHEAL CONCORD MINE.**—The tributaries are bringing up some very respectable work, which they are preparing with all expedition for the market. The 10 fm. level going east is also looking well; some fine branches of lead have been passed through in this level. The other level will be cleared in a few weeks, and when this is done several fresh pitches will be set. Taking every thing into account, there is a strong probability this mine will considerably improve, and that, too, before the expiration of many months.

**WHEAL FORTESCUE.**—Here the shaft is sinking with all reasonable despatch, and, at the same time, they are driving the adit to cut the main lode. As this is situated between Wheal Maria and West Wheal Maria, it is very strange if something does not turn out in her favour before long. One advantage in behalf of this mine is this, that it can be proved by water-power.

**WHEAL GRACE.**—At the adjoining mine to the west, in making preparations for the erection of a suitable steam-engine, it is reported that several tribute pitches can be set, as soon as the water is drained from the present levels, which are only a few fathoms in depth. A large pile of work was raised from this mine, a few months ago, during the short period it was set on tribute, and from the appearance of the ore ground in the levels, it seemed as if some of the shoots were dipping east and west of Wheal Concord sett. It is, therefore, the general opinion, that the neighbouring adventurers will be instrumental in developing each others' resources, to the mutual benefit of the shareholders.

## X BOLANOS MINING COMPANY.

The annual general meeting of the shareholders in this company was held yesterday (Friday), at the offices, Duke-street, Adelphi.

The SECRETARY having read the notice convening the meeting, The CHAIRMAN said, the first business to be proceeded with, was the election of directors, who went out by rotation; and, it having been put to a show of hands, S. Skinner, Esq., and Sir R. Price, were severally re-elected; and Mr. Kerrison was elected in the room of Mr. Martineau, deceased; Mr. Terry was re-elected an auditor.

The directors' report was then read, which was highly satisfactory, and which we shall give entire in our next; the old mines of San Clemente and San Nicolas, which had returned so largely, appearing to be worn out, other setts had been examined, with the view of working and making increased returns; and of those of Celestina and Cerra del Bote, the greatest hopes were entertained; and, from the general prospects of the company, it was expected they were in as promising a position as at any period since the formation of the company. For the results of the new process for extracting the silver from the ore, we refer to the report of the Real del Monte.—From the statement of accounts, it appeared that the profit for the year amounted to \$48,875; the balance in hand in England was 12,023*l.*; and assets in Mexico, 184,910*l.* 4*s.* 7*d.*

Mr. TERRY, as usual, occupied some time in raising objections to the accounts—the losses on some of the mines—which if avoided, would have realized a dividend—and particularly repeated his wish expressed at former meetings, that the report should be printed and circulated before the meeting.—Mr. TAYLOR and the CHAIRMAN severally explained on the former subjects, stating (what of course is known to all conversant with mining) that without previous expenses, there can be no ultimate profit; and that, out of a certain number of adventures, there must be some loss; that, however, on the mines mentioned, the directors rested their principal hopes, and they had every encouragement that they should not be disappointed.—Mr. H. TWISS, explained as to printing the report previous to the meeting, which (he observed) was contrary to all practice, and could not be done, as it must first be adopted by the proprietors.—The report and accounts were then adopted, and ordered to be printed and circulated among the proprietors; and a vote of thanks having been passed to the chairman the meeting broke up.

## X REAL DEL MONTE MINING COMPANY.

The annual general meeting of the shareholders in this company was held yesterday (Friday), at the offices, Duke-street, Adelphi.

Mr. PHILLIPS (the secretary) having read the notice convening the meeting, H. Twiss, Esq., and Sir R. Price, who went out of office by rotation, were severally re-elected; and Mr. Terry was re-elected an auditor.—A vacancy having been occasioned in the direction by the decease of Mr. Martineau, there were two candidates for the election.—Mr. Cooper, one of the auditors, and Mr. Brown, one of the committee—appointed some years since, and which sat some 18 months, making a full and complete enquiry into the state of the company's property, expenditure, &c., and whose enquiries formed the ground for the directors sending Mr. Phillips on a special mission to the mines; both gentlemen had been shareholders for 15 or 16 years.—On a show of hands, the sense of the company was largely in favour of Mr. Brown; when, to avoid the trouble and expense of a ballot, Mr. Cooper handsomely gave way, when Mr. Brown was unanimously elected.

The directors' report was then read, which was of a most satisfactory nature, and which we shall give at length in our next. The mining prospects generally had improved, and it was calculated, from all appearances, that a profit would continue to be made throughout the current year. The principal feature, however, was the complete success of the new extraction process, as introduced by Mr. Spangenberg; and, from all the experiments made, instead of a loss of from 20 to 30 per cent. on the silver contained in the ore by previous assay, the utmost loss did not exceed 4 per cent. It was fully expected, that even the rich smelting ores would be capable of reduction by the new process, as well as the poorer ores, which had been long collecting, and which would not pay for reduction by the old process. If this should be effected, the saving would be enormous, as the cost of the smelting was \$15 per cwt.; by the barrel amalgamation it was \$8½ per cwt.; and, by Mr. Spangenberg's last experiment, on a large scale, the cost did not exceed \$2 per cwt.—this was in addition to the saving in the larger portion of metal obtained; and a still further important consideration was, that, by this new process, the reduction of a given quantity could be effected in three days, which formerly could not be accomplished under from 30 to 40 days.

From the statement of accounts, it appeared the expenses during the year had been as follows:—Paid on account of officers in Mexico, 4849*l.* 2*s.* 9*d.*; passage of officers, 173*l.* 4*s.* 8*d.*; goods purchased, and shipped to Mexico, 7970*l.* 2*s.* 2*d.*; insurance, interest, &c., 1688*l.* 1*s.* 11*d.*; London management, directors, auditors, managers, secretary, and clerks, postages, rent, office charges, printing, stationery, drawing plans, &c., 1990*l.* 10*s.*—total, 16,627*l.* 19*s.* 6*d.*—The total amount expended in Mexico, from the commencement, had been \$10,889,414 5½; and returns, \$9,083,741 2½.

In reply to a question by Mr. Field, the CHAIRMAN informed the meeting of the terms under which they held the patent from Mr. Spangenberg. The payment to that gentleman is conditional; on his proving his process to be superior to the barrel amalgamation, he is to receive 6000*l.*, to be paid between the two companies jointly, who have made an agreement with an eminent house in the copper trade, to take the English patent, for which they are to pay 1000*l.*; and they have found it sufficiently successful to induce them to extend their works, and purchase copper ore, known to contain silver: it is not applicable to silver-lead ores.

The report and accounts were then unanimously adopted, and ordered to be printed and circulated among the proprietors; and a special vote of thanks having been passed to the chairman and directors, the meeting separated.

**X TING TANG CONSOLS MINING COMPANY.**—At a meeting of adventurers, held at the mine, on Thursday, the 18th inst., the disbursements having been examined by the adventurers present, it appeared that the tutwork and tribute cost for March and April amounted to 1044*l.* 14*s.* 1*d.*; the merchants' bills to 902*l.* 12*s.* 7*d.*; and the balance of last account to 1945*l.* 16*s.* 2*d.*—making 3893*l.* 2*s.* 10*d.*—By call of 10*l.* per share, 2560*l.*; tin sold, 287*l.* 7*s.* 11*d.*; copper ore sold, 250*l.* 11*s.* 1*d.*—2838*l.* 18*s.*; from which deduct dues, 124*l.* 18*s.* 11*d.*; leaves a balance against the adventurers of 1672*l.* 10*s.* 9*d.*—The following resolutions were passed:—That the accounts, having been seen, be allowed; and that a call of 6*l.* per share be made, and collected forthwith.—The following report, from Capt. W. and T. Richards, H. Creugey, and T. Ellery, was read to the meeting:—"Since the meeting of the adventurers on the 21st April last, we have opened a fair quantity of ground on the various lodes, and some of the levels have produced ore, by which we are encouraged to hope that, by further exploring, we may succeed in making the mine profitable. The following are the tutwork bargains now in operation (85 men employed):—At Wheal Squire lode, George's shaft is sunk 13 fms. under the 20 fm. level; we intend to sink 2 fms. more, and then intend driving on the course of the lode, which is about 4 ft. wide, kindly, with stones of ore. The 20 fm. level is extended west of said shaft 20 fms., lode from 2½ ft. to 4 ft. wide, producing ore. The adit level is extended about 60 fms. west on said lode, and a shaft sunk from surface on it, and will shortly be resumed to go below the adit level, and also the end continued. The adit has also been extended on a south lode, which has a promising appearance, 18 in. wide. John's shaft is drained to the 120, and the levels, east, west, and south, cleared, and will immediately be driven. The south cross-cut is driven 40 fms., and we expect there is from 40 to 50 fms. more to intersect Wheal Squire lode, ground favourable. In the 110 fm. level east the lode is 2 ft. wide, 1 ft. good ore. In the 90 fm. level, west of Skinner's shaft, lode large, and a kindly gossan. In the 60 fm. level we are cross-cutting to prove north and south lodes. Roach's shaft is sunk to the 110 fm. level, and said level extended west 10 fms., lode 4 ft. wide, producing ore; said level east to within 10 fms. of Jeffery's shaft, lode 3 ft. wide, kindly, with stones of ore, and has much improved of late. The 80 fm. level east is extended under Wheal Moyle, and we intend to rise and hole to their workings. The 80 fm. level west is extended 70 fms., lode 1 ft. wide, orry. We are also clearing out the adit level, in order to explore the fine gossan in the western hill, and we expect this summer to get much below the adit before our western levels come forward."

**DERWENT MINING COMPANY.**—The directors of these mines have issued a statement of the affairs of the company for the past year, forming the 13th annual report. From this document, it appears, that during the four quarters ending Dec., 1845, the sales of lead amounted to 1000 tons, and averaging 20*l.* per ton, producing consequently a return of 20,000*l.* The disbursements for the same period amounted to 17,843*l.* 6*s.* 2*d.*, being 2156*l.* 18*s.* 10*d.* less than the receipts, and equal to rather more than 6*s.* per share, on the capital of 7160 shares (8*l.* paid). The disbursements are made up as follows:—Wages and payments at mines, 14,581*l.* 10*s.* 3*d.*; duties and mine rents, 2887*l.* 11*d.*; London offices and general management, 874*l.* 15*s.* This report also furnishes another and interesting proof of the extraordinary manner in which the railway mania has interfered with, and deranged, the general principle of labour throughout the country. "The mines," continues the report, "have decidedly improved, but the demand for labour, stimulated by the late high prices of iron, and the construction of so many railways, has been such that we have been deprived of half our mining force, and to preserve the remainder have been obliged to raise their wages very considerably—the effect of which is, that our produce is much less than what, from the improvement of the mines, it would have been, and the cost much greater. The increase still of 1845 over the preceding year is 150 tons at least, and the profits on the year may be taken at 2000*l.* 2500*l.*" The Derwent Mines are situated in Northumberland, adjoining the well-known mining property of Mr. Beaumont, about 20 miles from Newcastle.

## THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending June 20, was 17,169; amount of money, £71 10*s.* 9*d.*

## ST. JOHN DEL REY MINING COMPANY.

We gave, in the *Mining Journal* of the 6th inst., a report of the proceedings of the annual meeting of this company, held on the 29th May, when, in consequence of the non-arrival of the packet, the directors could present no report, or statement of accounts; a detailed report has, however, been since issued, and a statement of accounts, to the 11th June inst., which is as follows:—"In presenting to the proprietors a report of the company's proceedings during the past year, the directors are happy in being enabled to state, that the affairs of the company are in a steady and satisfactory condition. It is true, that the disaster of Dec., 1844 (the details of which were given in last year's annual report), proved more serious, and its results more enduring, than the directors had anticipated; the consequence whereof was, that they were compelled to reduce the last half-yearly dividend to 5*s.* per share.—[Here is inserted a circular, issued by the directors, on the 15th Dec., 1845, and published in this Journal on the 20th.]—The anticipation conveyed in that circular, that the then following six months' working would give a very improved result, as compared with the preceding six months, has been verified—the profit having been nearly doubled in the last six months. The monthly produce of gold, from March 1, 1845, to February 28, 1846, has been as follows:—

1845—March.....	Ozts. 8,792	1845—October.....	Ozts. 11,003
April.....	10,457	November.....	10,911
May.....	11,563	December.....	11,170
June.....	9,190	1846—January.....	11,800
July.....	9,567	February.....	10,764
August.....	10,775		
September.....	11,793	Total.....	Ozts. 128,515

The 12 months' produce to Feb., 1846, was 124,432 ozts. The net profit on the working the mines, for the year ending the 28th Feb. last, as will be seen by the statement in the Appendix, has been 11,699*l.* 17*s.* 8*d.* The cost for materials, during the past year, has been much higher than during the preceding year; but the superintendent remarks, that the value of the stores on hand, on the 31st Dec., 1845, was greater, by 27,398 milreis, or 3000*l.*, than at the end of 1844. It will be seen by the mining captain's report, that the extent of stopping ground now laid open is 366 square fathoms—viz.,

United Mines.....	Sq. Fms. 186
Gamba.....	20
East and West Cachoeira.....	160—366
At the close of the preceding year, the stopping ground laid open was.....	344

Showing an increase of stopping ground laid open in the past year of ..... 22 while, in length, a proportional increase has taken place, say from 187 fms. at the end of 1844, to 205 fms. at the end of 1845. The company is now in possession of an adequate supply of labour for working the additional ground thus laid open. The Brazilian Company having determined on discontinuing their operations in Brazil, an agreement was, in June last, entered into by this company for the acquisition of the whole of their stores, machinery, and property, and for the hire of their negroes. The statement of the condition of the mining works, and all other matters, at Morro Velho, contained in the superintendent's report in the appendix, is so full, that the directors are not aware that they can add anything to it. The amount of ore raised in 1845, was 29,815 tons, being somewhat under 2500 tons per month. Capt. Treloar expects, as will be seen from his report, to increase this quantity to from 3000 to 3500 tons per month. If this estimate be realised, which the board see no reason to doubt, there ought to be a considerable increase of produce in the ensuing year. The effective force on the establishment on the 31st December last, as will be seen, by the statement in the Appendix, was 811. It has since been increased, by the arrival of the remainder of the negroes hired from the Brazilian Company, to 998.

The amount of profit made from Feb. 28, 1845, to Feb. 28, 1846, having been carried to the credit of the profit and loss account, leaves that account in credit, after paying the half-yearly dividend, due 6th Jan. last, £10495 0 1 Out of which the directors have declared a half-yearly dividend (clear of income tax) of 10*s.* per share, payable on the 20th June inst..... 5500 0 0

Leaving at the credit of profit and loss..... 4995 0 1

The following is a statement of the company's finances:—

In England—Cash at the bankers on the 11th June.....	£1654 4 1
Railway debentures.....	5000 0 0
Bullion, estimated at.....	7511 15 0—14165 19 1
To pay—Drafts running, from Brazil.....	8292 8 7

Surplus in England.....	£4878 10 6
In Brazil—Cash in the hands of Messrs. W. Harrison & Co.....	£5453 6 2
Ditto the superintendent.....	164 14 3—5618 0 5
Due for salaries and wages in Brazil.....	4042 10 1

Surplus in Brazil..... £1875 10 0

The superintendent has engaged the services of Capt. Thomas Treloar, late in the service of the Imperial Brazilian Company, to succeed Capt. Verran, as mining-captain at Morro Velho, and he took charge of the mining department in the month of October last. Capt. Treloar's great experience in mining in Brazil, together with his other mining qualifications, render this engagement a very satisfactory one to the directors, and they have no doubt it will prove very advantageous to the company. The directors are happy to state, that the whole establishment is in an efficient and satisfactory condition. In the superintendent's annual report, will be found all matters of detail respecting the establishment at Morro Velho; and annexed will be found the balance-sheet, statement of receipts and expenditure during the past year, profit and loss account, gold remittances, and statement of expenditure and produce at the mines. P.S. By letters received this day from Morro Velho, the produce of gold in March was 13,480 oitavas.—June 18.

From the statement of receipts and expenditure, it appeared that the receipts from May 15, 1845, to June 11, 1846, were as follows:—Balance 204*l.* 6*s.* 7*d.*; proceeds of six shipments of gold 42,458*l.* 8*s.* 9*d.*; on account of gold per *Penguin* 2000*l.*; interest 156*l.* 0*s.* 6*d.*—together 44,818*l.* 15*s.* 10*d.*; while the expenditure including the sixth and seventh half-yearly dividends, amounting to 9620*l.*, had been 43,158*l.* 9*s.* 6*d.*—leaving a balance of 1655*l.* 8*s.* 4*d.*—and the profit and loss account shows a balance of profit of 10,495*l.* 0*s.* 1*d.*, from which a dividend of 10*s.* per share, payable on and after the 20th inst., has been made as above stated.

## MINING IN WALES—LLANCYNFELIN MINES COMPANY.

The following is an extract from the report submitted to the shareholders at the first general annual meeting, held on the 19th of June inst., to which we direct the attention of our readers as evidencing the progress made in mining operations in Wales:—"Since the last meeting, a steam-engine, with all the necessary pitwork and machinery for pumping the water, and returning or dressing the ores, has been ordered, and will shortly be erected by Mr. West; this, it is believed, will be the first steam-engine erected for mining purposes in this part of the principality. The engine-house is built 1 ft. above the cylinder bed, and the masons are getting on very well. A good smith's shop, count-house, and timber shed, and other necessary buildings, have also been erected, and have been for some time in use. The operations on the different lodes may be briefly stated as follows:—In the main lode adit, which has been driven 278 fms. in length, are several places which will let on tribute, and leave a fair profit to the adventurers; and, accordingly, several hands have lately been brought from Cornwall, so as to keep up the samplings, on the erection of the machinery; and it is calculated, independent of the ore at surface, enough may be raised from hence to keep the stamps at work for some time. About 65 fms. from the mouth of the adit is a cross-cut, driven northerly, and probably cut No. 7 and No. 10 lodes, as a shaft is sunk on it from the surface, which is now filled up with rubbish. This we are now rapidly clearing up, with a view of ascertaining its object, and the bearing and underlie of these lodes, which have never been seen below the surface. The 8 fm. level, on this lode, has been extended west of the whim shaft about 48 fms.; and for the greater part of that distance has proved exceedingly productive, and, for a distance of about 15 fms., very rich. This level has been now let on tribute, and there are now eight men stopping on the back—four east and four west of the winze—which has been sunk to the 18 fm. level, called footway winze. The east stopes are worth from 25*l.* to 30*l.* per fm.; west stopes, from 20*l.* to 25*l.* per fm.; in the winze the lode is about 3 ft. wide, having a very promising appearance. The 18 fm. level has also been continued west, producing good work; 5 fms. west of the footway winze is another winze, sinking below the 18 fm. level, the lode in which is also producing good stones of ore; the water here does not exceed 20 gallons per hour. In driving these levels west, the lode has been intercepted and hoyn by a cross-course; but there is little doubt, that it will shortly be recovered—and when, as the stratification is dipping west, and the lode made rich, in approaching the cross-course, it is probable it will be found equally as good, if not better, than it has yet been. A discovery has recently been made of a large copper lode, about 12 ft. wide, in the hill at Tredd, about one mile from our sett, which produces yellow and black copper ore, worth from 20*l.* to 30*l.* per ton; this lode has been drilled, and found to pass through our sett, and, should it be found to make rich in depth in the low ground, it will prove a most valuable and important addition. The 8 fm. level has not been continued east—it being considered sufficient to extend the 18 fm. level in that direction. This level has been driven in all about 50 fms. east of the whim shaft; and a winze, called Jones's winze, sunk below the adit, to communicate for ventilation. Through a part of this distance, the lode has passed through a hard bar of ground, and has not proved very productive—as indeed was the case in the adit. It is now, however, much improved, and is from 1 ft. to 1½ ft. big, good ore throughout. A winze is also sinking from the adit by Mr. Johnson's orders, in a line with the new engine-shaft, to meet the 18 fm. level coming east (Johnson's winze); and it is proposed, when sunk, to drive east towards the east bog and west to communicate with the 18 fm. level, and to cross-cut to the engine-shaft. By this means, the present levels will be completely drained, and sufficient water supplied for the use of the engine. The lode in this (Johnson's) winze is about 18 in. big, good saving work, and of a very promising character; and there seems every reason to believe—as we have now driven through the hard bar of ground, which will be seen on reference to the plan—that the lode will gradually improve, coming east towards the eastern

bag, where we anticipate even still more satisfactory results. An engine-shaft is being sunk on this lode, to intersect it at about 60 fms. below the adit; this is now down about 20 fms. The ground is still favourable for sinking—about 5 ft. a week. At about 72 fms. east from the shaft is fixed upon for the engine crusher and stamps, which is so placed as readily to command the whole of the lodes in the set by means of flat-roads, by which means they can be proved and worked at a small expense for a very considerable period, as the water is very little in these mines, owing to the great extent of peat formation surrounding, which keeps the surface water. 55 fms. east of the spot fixed for the engine, &c., are three middle lodes, which have only been opened on at the surface, where some very fine stones of lead ore are to be found in the old rubbish. An adit has been driven towards these lodes from the northern bog for some distance on the course of a caunter lode, called the Thirza lode, and a shaft was sunk thereon about 4 fms. This has now been continued to the middle lodes, in order to ascertain their underlay, previous to sinking a perpendicular shaft, to intersect them and the Thirza and north lodes at a given depth. No. 4, middle lode, has just been cut, and is very large and promising, and in the course of about 4 or 5 fms. the others will be seen.

As regards the Thirza lode, although, at this shallow depth, it is about 2 ft. wide, uniformly regular, and with well defined walls, and is composed of quartz, with a softish slate, carrying stones of lead, of a very promising description, the lead from this lode contains more silver than any other in the set. It will form a junction with No. 4 middle lode, in about 11 fms. driving—a point of great importance, as it is probable a valuable bunch of lead will here be discovered. A lobby has also been brought up from the northern bog, on the north lode, and an old shaft cleared up, which had been sunk about 10 fms. from the surface. The lode in this shallow level is about 10 in. wide, composed of carbonate of lime and galena, and of the most promising possible description, as may readily be imagined from its having paid the cost of driving. In the bottom of the old men's shaft, about 5 fms. deeper, the lode is still better, and is increased in size to about 18 in., but the water is too quick to render it worth proceeding further, as it can be explored at a greater depth from the proposed shaft, when the engine goes to work. It is a most important fact, that not only can the whole of these lodes be commanded by one shaft, but that they will all form junctions with one or other—the Thirza lode forming a junction with the middle lodes, and the north lodes with the Thirza. On the whole, taking into consideration these peculiarities, the promising nature of the lodes themselves, and their situation running under the peat or bog, which has always been considered favourable for the deposit of lead, there seems every reason to believe that this part of the set will prove singularly productive, and justify the most sanguine expectations that have been entertained of it. The old shaft on the south lode, and the adit driven from Capt. Jones's land (the new set) thereon, have now been cleared. This lode is about 2 ft. wide, composed of a softish chlorite slate, containing lead of a very superior quality, and is accompanied by more iron pyrites, and has a stronger mineralised appearance, than any other lode in the set. It is certain that a large quantity of ore has been raised from this place, and there appears to be a continuation of the shoot at the bottom of the old men's workings; the water, however, is too quick to work at any advantage, without erecting a whim—and, as we are under engagements with Captain Jones to sink a shaft, and work on his land, in consideration of his reducing the dues to 1-15th, it will, probably, be found most expedient to sink a new shaft to the west of the cross-course referred to, which will take the lode at a much greater depth than at present, and will drain the whole of the water from it, by means of the engine, which could not be done in any other manner at this part of the set. In conclusion, the committee believe, from the united testimony of every practical man who has been consulted (including some of the first Cornish captains), that the indications are such as most fully to justify, and require an active and more extensive development. It is agreed by all, that the lodes are both numerous, promising, and productive; and if they, like others of similar ingredients, traversing the like rock formation, be found to improve in depth, the set may justly be considered as one of the most valuable in the principality.

**IMPORT AND EXPORT OF COPPER, TIN, ZINC, AND LEAD ORE.**—The quantity of copper imported into the United Kingdom in the year ending 5th Jan., 1846, was 56,697 tons; also, about 50 tons of unwrought, and partly wrought, copper, plates, and coins; net amount of duty received thereon, rather over 60,000 £. The quantity of British copper exported in the same period was 18,089 tons, about one-third of which was sent to France in an unwrought state. To British India the quantity sent was 4722 tons, unwrought and wrought; and to the United States, 2219 tons. Nearly one-third of the whole went from the port of London. The quantity of tin imported into the United Kingdom in the year spoken of was 1278 tons; net duty received thereon, 2729 £. Exported in the same period, 576 tons of British, and 917 tons of foreign. Zinc and zinc ore imported in the same year, 12,902 tons. Exported, English, 1134 tons; foreign, 2683 tons. Lead ore imported, 444 tons; pig and sheet-lead, 5209 tons; white lead, 22 tons. British lead and lead ore exported, 14,588 tons; foreign ditto, 3241 tons. These returns were moved for by Mr. Pendarves, and ordered by the House of Commons to be printed on the 16th of June instant.

**TRELAWNEY AND MARY ANN MINES.**—The disputed question as to the relative interest held by the adventurers in Trelawney in the last named set, having been referred to arbitration, we are given to understand, a meeting of the arbitrators takes place on Tuesday next—a report of whose decision we shall lay before our readers.

**BRAZILIAN GOLD MINES.**—The Brazilian Government, being about to establish a museum of economic geology, illustrative of the gold mines in the province of Minas Geraes, have applied to our countryman, Mr. W. J. Henwood, F.R.S., chief commissioner of the Imperial Brazilian Mining Association, to assist them with the result of his long and extensive experience whilst superintending the Royal Cornwall Geological Society's collections, and to direct the arrangement of their valuable and interesting specimens. We trust the result of this gratifying compliment will not be lost to the geological world on Mr. Henwood's return to his native country.

#### MINERS' CLUB.

TO THE EDITOR OF THE WEST BRITON.

SIR,—It is satisfactory to observe, by the letter of "A Cornishman" [inserted in the *Mining Journal*, of the 13th of June], that this subject attracts to itself a share of attention. While, however, we seek to keep up any such interest towards it as may exist, we must, on the other hand, be careful not to tire yourself or your readers. Brevity must be our motto. Through inadvertence, probably, has the matter been so long neglected; and, when those who have the power to promote such an institution once become penetrated with its importance, measures will surely be taken for its establishment. Shall it, indeed, ever be said, that the agricultural county of Essex, where, comparatively, no dangers or hardships exist for the labourer in his work, can form such a general club, with an income of 48,000 £ a year; but that the great and intelligent capitalists of our mines can do nothing, in a far more urgent case? The various proposals for establishing hospitals, mining schools, &c., having dropped through, let the lords and adventurers now profit by the opportunity for redeeming their credit, by supporting a miners' club, for which all the main elements already exist. Let it not be true, that nothing can be done for the 30,000 Cornish miners—the lowest paid, the most contentedly suffering, of labourers—and whose condition their superiors, from the Government downwards, have hitherto so much passed over. What an inexpressible advantage would it be to the miner, to have a sure and unfailing club to rely on for support in sickness and age, and to be freed from all connection with the broken reeds of clubs to which he now unavoidably has recourse. He would, moreover, improve as a workman, and would have his character raised in feeling himself entitled to support from a club chiefly founded on the payments of himself and his fellows. Material relief, also, would be incidentally afforded to parishes, by the miners being thus provided for independently of the rates. In setting forth the hardships of the miners' calling, my only object is, to show how great is, consequently, the obligation, and how urgent the necessity of providing for their wounds, their sickness, and premature age, by the establishment of a general miners' club. And such, I doubt not, is the object of your other correspondents also. No odium is cast on the employer, or discontent stirred amongst the men. Should, however, a persevering neglect of their claims, and of providing for their peculiar condition, in some effectual manner, be manifested, then the lords and adventurers will indeed subject themselves to charges of a weighty nature, and of which the practical effects may be serious. But better things are to be hoped for; and I am most unwilling to suppose, that they will neglect the inviting opportunity of providing for the men the eminent benefit of a general miners' club.—J. PATNER: June 8.

#### MINE ACCIDENTS.

**Sedgley.**—J. Biggs, aged 9 years, was killed by a fall of earth in an ironstone pit *Willenhall-road, Bilston*.—J. Fellowes was killed by an explosion at Messrs. Benton and Pemberton's Colliery.

**Boversey Colliery, Bilston.**—J. Chillington, aged 14 years, was killed here.

**Midgley, near Doncaster.**—R. Ripley was killed by an explosion of fire damp.

**Tredgar.**—An explosion took place at Messrs. Homfray's colliery, by which eight individuals were dreadfully burnt, four of whom have since died; two horses were killed.

**Pentrick.**—T. Miles was killed in a pit here by a fall of coal.

**Hately Heath, near West Bromwich.**—Last week, three entire houses, with all they contained, suddenly sunk into the earth from the working of the thick coal beneath, and the roofs are 6 or 7 ft. below the surface—the occupants escaped, but have lost their all.

**WHEAL ROBERTS TIN MINE.**—A correspondent writes us to the effect, that several mine agents have just inspected this mine, which is situated near Ding Dong, and reported very favourably upon the prospects, recommending machinery to some extent, in order to test what they consider a "keenly spec." The tin in the main shaft is worth 10 sh. per fm.—*Penzance Gazette*.

**CRUYDON ATMOSPHERIC RAILWAY.**—We understand this line will recommence working next week. The new valve-sealing composition is said to be of a nature to withstand the intemperance of both heat and cold.

## Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.	
Bank Stock, 7 per Cent., 205½	Belgian Bonds, 4½ per Cent., —
3 per Cent. Reduced Ann., 94½ 5 4½	Dutch, 2½ per Cent., 60½
3 per Cent. Consols Ann., —	Chilian, 5 per Cent., 54½
3 per Cent. Annuities, —	Mexican, 5 per Cent., 27½
2½ per Cent. Ann., 94½ 5 4½	Spanish, 5 per Cent., 24
Long Annuities, 10½	Ditto Deferred, 15½
India Stock, 104 per Cent., —	Portuguese, 4 per Cent., 47½
3 per Cent. Consols for Acc., 94½ 5 5	Russian, 5 per Cent., 109½
Exchequer Bills, 1000 £, 13 9 13 pm.	

**MINES.**—In the share market very little has been doing in British mines, and very little alteration can be reported in prices. Since the arrival of the regular packet, some dispatches have reached Liverpool of a most satisfactory nature to the shareholders in St. John del Rey Mining Company; it appears, that the produce for the month of March was 2955 tons of ore, which yielded 13,430½ oits., or 129 lbs. of gold. The produce of the United Mines for the same period was 4-989 oits. per ton. We call attention to the promising prospects of the Bolanos and Real del Monte Mining Companies, as shown at the meetings held yesterday, reports of which will be found in another column.

**RAILWAYS.**—The share market has been exceedingly flat during the week, and very little business has been done—indeed, so much apathy has existed, that little or no change has taken place in prices, and there has been no feature worthy of particular remark.

**Preambles proposed in Lords' Committees.**—Edinburgh and Northern (Dumfries-line division); Strathgarn deviation; Great Western and Oxbridge; Norfolk (Yarmouth Extension), and Lowestoft Railway lease; Dunblane, Doone, and Callander; Glasgow, Paisley, and Greenock (Pollock and Govan branches); Glasgow Southern Terminal; Caledonian (Mid Lothian branches); Leamington, Dalserf, and Coatbridge Mineral Junction; Grand Junction (Huyton and Warrington branch); the same (Huyton, Ashton, and other branches); Yorkshire and Glasgow Union.

In a "select committee on merits," the following bills were declared to have passed, and ordered to be reported:—The Midland (Nottingham and Mansfield branch); London and Birmingham (Camden and Euston stations enlargement); Midland (Clay Cross to Newark); Wiltshire, Dorset, and Colchester (Bathgate branch); ditto (Caledonian branch); ditto (improvement and branches); Slamannan (Bathgate and Jawragh branches).

**Standing Orders complied with in Lords.**—St. Helen's Canal and Railway; Birmingham, Lichfield, and Manchester; Wakefield, Pontefract, and Goole (Methley, Askarn, and Oakenshaw branches); Gloucester and Dean Forest Railway; Wislaw and Coltness (Greenhill branch); Fleetwood, Preston, and West Riding Junction; Huddersfield and Manchester Railway and Canal; Huddersfield Diversion and Cooper Bridge branch; Sheffield, Ashton-under-Lyne, and Manchester (Whaley-Bridge and Hayfield branch); Sheffield, Ashton-under-Lyne, & Manchester (Dukinfield, Worsborough, & other branches); Dublin, Belfast, and Coleraine Junction; Eastern Counties (Manchester and Lincoln Extension).

**Bills Rejected by Lords' Committees.**—Swinton and Lincoln; Doncaster, Wakefield, and Leeds; Buckinghamshire (Tring to Banbury).

**Bills passed Committees of the Commons.**—Exeter, Yeovil, and Dorchester; Board of Trade to determine at whose expense the double gauge should be laid down and maintained; London and Richmond (Kew branch); Bristol and Birmingham (Gloucester and Stonehouse junction); South Devon (excepting branch from Plymouth to Tavistock); Great Grimsby and Sheffield; Liverpool and Bury, and Manchester and Leeds amalgamation; Manchester and Bolton, and Bury Canal and Railway, and Manchester and Leeds Railway amalgamation; North Kent (South-Eastern line); London, Salisbury, and Yeovil; Lancaster and Carlisle (extension to the Caledonian); Caledonian (Carlisle division); Cockermouth and Workington; Bristol and Gloucester, and Birmingham and Gloucester; Blackburn, Preston, and East Lancashire Junction; Caledonian (purchase of Gamark, Edinburgh and Glasgow); and Clydesdale Junction; Pollack and Gavan amalgamation; London and Birmingham and Canal arrangement; Manchester, Huddersfield, and Oldham.

**Preambles in Commons.**—Oldham, Manchester, and Birkenhead, proved; Oldham district line, not proved; Caledonian (Clydesdale Junction, deviations) proved; Midland (Leicester and Swannington), proved; Caledonian Extension, not proved; Blackburn, Chorley, and Liverpool, not proved; Llinvi Valley and South Wales Junction, proved.

**Bills Rejected in Commons' Committees.**—Dover and Deal; London, Hounslow, and Western; London and Windsor; Leeds, Wakefield, and Midland (Wakefield, Pontefract, and Goole Junction); Huddersfield and Sheffield line (Darfield branch).

**Bills read a third time.**—Glasgow, Dumfries, and Carlisle; the Cornwall Railway Bill; Edinburgh and Bathgate Railway; Ipswich and Bury St. Edmund's (Norwich Extension); Belfast and County Down; Leicester and Bedford; Wakefield, Pontefract, and Goole.

The deposits in the Court of Chancery have been ordered to be returned in the following cases:—Cambridge and Leicester; Lincoln, York, and North Midland, and South Midland; Chester and Manchester; Maidstone and Stroud; Canterbury and Dover; Reigate and Dorking; Clitheroe Junction.

**Sessional Order Meetings.**—Cockermouth and Workington: agreed to unanimously.—Newport, Aberavenny, and Hereford: agreed to proceed by a majority of 8270 to 803.—Monmouthshire (branches): agreed to unanimously.—Aldridge and Bathgate Junction: unanimously agreed to.—Midland and Eastern Counties: majority to proceed.—Direct Birmingham, Oxford, Reading, and Brighton: resolution passed, authorising solicitor to proceed against committee for deposits.—St. Lawrence and Atlantic Railway: to consider a communication from the directors in Canada; the wishes of the English shareholders to wind up having been conveyed to Canada, the directors there replied that they could not consent to such a step, as they wished to proceed, and recommended that a deputation from England should proceed to Montreal, to attend a meeting in July. The meeting broke up, without coming to any formal resolution.

A special meeting of the Eastern Counties Company was held on Thursday last, to consider two bills—one for the Wisbeach, St. Ives, and Cambridge Junction; the other for two branch lines to the Thames. Mr. Hudson took the opportunity to disclaim all unfair attempts to prevent the London and York Company from obtaining their bill.—A meeting of the British and Irish Union Company was held at Glasgow, when it was resolved to pay 2½ per share—to appoint a committee to investigate the accounts—and to keep back 1s. or 1s. 6d. per share, to enable the scheme to be revived if necessary.

**MESSRS. LAMONT'S SALES.**—TUESDAY.—Glasgow, Dumfries, and Carlisle (21. 10s. 6d.). 11. 5s. 6d.; Buckinghamshire (21. 2s.), 11. 15s. 6d.; Goole and Doncaster (21. 2s.), 11. 8s. 6d.; North Kent (21. 10s.), 11. 7s. 6d.; Scottish Central (101.), 15s. 7s. 6d.; Direct London and Portsmouth Atmospheric (31. 15s.), 41. 4s. 6d.; Shrewsbury and Birmingham (21. 10s.), 21. 10s. 6d.; Lowestoft (101.), 51. 4s. 6d.; Blackwall Extension (51.), 31. 10s. 6d.; and Thirlkirk (101.), 41. 10s.; Direct Northern (21. 10s.), 11. 12s. 6d.; Manchester, Sheffield, and Midland Junction (51.), 31.

**FRIDAY.**—Reading and Reigate (21. 2s.), 12s.; Leicester and Bedford (11. 2s.), 17s.; Direct Birmingham and Leicester (21. 2s.), 11. 6d.; East Indian (5s.), 10s.; Guildford, Fareham, and Portsmouth—quarters (11. 5s.), 11. 2s. 6d.; North Staffordshire, Churnet, and Potteries (21. 2s.), 51. 8s.; Dunstable, London, and Birmingham (51. 5s.), 41.; Oxford, Worcester, and Wolverhampton (121. 10s.), 81.; Churnet and Blythe (21.), 11. 3s. 6d.; North Kent (21. 10s.), 11. 6s.; Madrid and Valencia (21.), 11. 2s.; Warwickshire and London (21. 2s.), 11. 7s.; East Indian (5s.), 10s. 6d.; London, Hounslow, and Western (21.), 13s. 6d.

**HULL, THURSDAY.**—During the past week considerable flatness has pervaded the share market, although no material alteration in price has taken place until this day, when the very precarious situation of Sir R. Peel's Ministry, combined with the general want of speculative enterprise, have had a very serious effect upon the prices of shares. North Stafford was heavy at 3½ pm.; West Ridings, 3½ per share; a large business was done in North British Carriages, but prices were a shade lower; for all other stocks, sales could only be effected by submitting to a sacrifice.

#### COAL MARKET, LONDON.

**PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.**  
**MONDAY.**—Chester Main 13—Davison's West Hartley 14 6—Dean's Primrose 13—Hastings Hartley 14 3—Ord's Redbush 12 6—Ravensworth's West Hartley 14—Tanfield Moor 14 9—West Wyham 13 9—Wylam 13 6—Wall's End Gibson 12 9—Hebburn 13—Hilda 13 3—Hotsup 13 3—Killingworth 13—Wharfedale 13—Eden Main 13 6—Bradford's Hutton 14 3 to 14 6—Haswell 15—Hutton 14 3—Lambton 14 3—Russell's Hutton 14—Shotton 14—Stewart's 14 9—Kellogg 14 3—Plummer 14 6—Adelaide 14—Seymour Tees 13 6—South Durham 13—Cowpen Hartley 14 3—Sidney's Hartley 14 3—Ships 16s.

**WEDNESDAY.**—Adair's Main 13—Buddle's West Hartley 14 6—Carr's Hartley 14 6—Chester Main 13—Dean's Primrose 12 9—Hastings Hartley 14 6—Original Tanfield 12—Ravensworth's West Hartley 14—Tanfield Moor 15—West Hartley 14 6—West Wyham 13 9—Wylam 13 6—Eden Main 13 3 to 13 6—Cowpen Hartley 14 6—Dorwentwater Hartley 14—Langenbeck 22 6—Sidney's Hartley 14 6—West Hartley Netherthorn 14 6—Wall's End Hebburn 13—Hilda 13—Killingworth 13—Walker 13—East Hutton 13 3—Hutton 14—Lambton 14 3—Stewart's 14 9—Kellogg 14 3—Plummer 14 6—Adelaide 14—Brown's Deane 13 6—Seymour Tees 13 6—Cowpen Hartley 14 6.—Ships at market, 10s.; sold 5s.; unsold, 5s.

**FRIDAY.**—Chester Main 13—Dean's Primrose 13—Hastings Hartley 14 6—Holywell Main 14 6—Original Tanfield 12 6—Tanfield Moor 15—Townley 13—West Hartley 14 6—West Wyham 13 9—Wylam 13 6—Wall's End Hilda 13 6—Hotsup 13 3—Eden Main 14—Bradford's Hutton 14 6—Hutton 15—Lambton 14 6—Russell's Hutton 14 3—Shotton 14—Stewart's 15—Hough Hall 13 6—Kellogg 14 3—Seymour Tees 13 6—Cowpen Hartley 14 6—Morgan's Gurn 15 6—Sidney's Hartley 14 6.—Ships at market, 6s.; sold, 5s.; unsold, 13.

**THE GREAT WELSH MINING CAUSE.**—We are assured, on the best authority, that the matters so long in dispute between the parties to the above well-known suit, and on which thousands of pounds have been fruitlessly spent in law, have been satisfactorily arranged, the basis of which is, a separation of the disputed mineral territory; each paying his own costs. This applies to the Park Dio and Tyr Gunter estates; but the Chancery suit, relating to the Lettly Brongy property between the same parties, still goes on. We regret this also has not been settled, though the members of the long robe will rejoice in it.—*Merthyr Guardian*.

## RAILWAY SHARE LIST.

RAILWAYS.	Paid	Closing pr. last week.	Closing pr. last night.
Aberdeen	£10	—	—
Amber, Nottingham, Boston, and Erewash Junction	2½	1½	3½
Armagh, Coleraine, and Portrush—25½ shares	—	—	—
Birmingham and Gloucester—100½ shares	100	128	127½
Birmingham and Oxford Junction—20½ shares	20	—	—
Bristol and Exeter—100½ shares	70	84	84
Bristol and Gloucester—50½ per share	30	—	—
Caledonian—50½ per share	5	10½	10
Cambridge and Lincoln—25½ shares	1½	—	—
Chelmsford and Bury	1½	—	—
Chester and Holyhead—50½ shares	15	20½	19½
Cork and Killarney—50½ shares	2½	—	—
Cork and Waterford—25½ shares	1½	—	—
Cornwall—50½ shares	5	—	—
Derby, Uttoxeter, and Stafford	2½	1½	—
Direct Northern—50½ shares	2½	—	—
Direct Manchester (Remington's)—20½ shares	2½	—	—
Ditto Rastick's	5	3½	3½
Dublin and Belfast Junction—50½ shares	10	—	—
Dublin, Belfast, and Coleraine—50½ shares	2½	—	—
Dublin and Galway—50½ shares	4	—	—
Dundalk and Enniskillen—50½ shares	4	2½	2½
Eastern Counties—25½ shares	14½	5 dis.	23½
East Lancashire	1½	24	23½
Edinburgh and Glasgow—50½ shares	50	—	—
Edinburgh and Perth	3	1½	—
Exeter, Yeovil, and Dorchester—50½ shares	22½	—	—
Goole and Doncaster—20½ shares	42½	4 dis.	—
Grand Junction—100½ shares	100	—	—
Grand Union (Nottingham and Lynn)	100	—	—
Great Grimsby and Sheffield—50½ shares	15	—	—
Great Northern and Western (Ireland)—50½ shares	100	22½	22
Great North of England—100½ shares	5	220½	223
Great Western—100½ shares	80	142½	141
Guildford, Farnham, and Portsmouth—50½ shares	5	4½	—
Hull and Selby—50½ shares	50	103	103½
Isle of Axholme	2½	—	—
Lancaster and Carlisle—50½ shares	25	—	—
Leeds and Carlisle	2½	—	—
Leicester and Birmingham—20½ shares	22½	½ dis.	—
Leicester and Bedford—20½ shares	22½	½ dis.	—
Leicester and Tamworth—20½ shares	42½	½ dis.	—
Liverpool and Leeds Direct—50½ shares	2½	—	—
Liverpool, Manchester, and Newcastle Junction	100	—	—
London and Birmingham	—	—	—
London and Birmingham Extension—25½ shares	1½	—	—
London and Blackwall	—	—	—
London and Brighton—50½ shares	50	8	7½
London and Croydon	—	—	—
London and Greenwich	—	—	—
London and South Western	—	—	—
London and York—50½ shares	—	—	—
London, Warwick, and Kidderminster—50½ shares	2½	—	—
London, Salisbury, and Yeovil—50½ shares	2½	—	—
Londonderry and Coleraine—50½ shares	2½	—	—
Londonderry and Enniskillen—50½ shares	5	—	—
Lynn and Ely—25½ shares	5	12½	—
Lynn and Dereham—25½ shares	5	—	—
Manchester and Leeds—100½ shares	82	123	116
Manchester and Birmingham—40½ shares	40	82	83
Manchester, Buxton, and Matlock—40½ shares	42½	½ pm.	½ pm.
Manchester and Southampton	2	—	—
Midland	150	150	150
Ditto Birmingham and Derby	128½	128½	121
Midland Great Western (Irish)—50½ shares	2½	—	—
Newcastle and Berwick—25½ shares	10	25	24½
Newcastle and Carlisle—100½ shares	100	—	—
Newcastle and Darlington Junction—25½ shares	25	45½	45
Ditto New (Branding)—25½ shares	20	—	—
Newport and Aberavenny	2½	—	—
Norfolk and Norwich	2½	—	—
Newark, Sheffield, and Boston—25½ shares	2½	—	—
North British—25½ shares	17½	29½	29½
North Devon	2	—	—
Northern and Eastern—50½ shares	45	75	—
North Kent and Direct Dover—50½ shares	2½	1½	1½
North Staffordshire—20½ shares	42½	3½ pm.	3½ pm.
North Wales—25½ shares	3½	—	—
Norwich and Brandon—20½ shares	18	—	—
Northampton, Banbury, and Cheltenham	2	—	—
Oxford, Worcester, and Wolverhampton	12½	1	7½
Perth and Inverness	2½	—	—
Portsmouth Direct—50½ shares	3½	3½	3½
Preston and Wyre—50½ shares	50	30	30
Richmond—20½ shares	5	—	—
Rugby and Huntingdon—20½ shares	2	—	—
Scottish Central—25½ shares	7½	—	—
Scottish Midland—25½ shares	10	—	—
Sheffield and Manchester—100½ shares	100	—	—
Shrewsbury and Birmingham	2½	—	—
Somersetshire Midland	2½	—	—
South Devon—50½ shares	25	—	—
South Eastern and Dover	—	—	—
South Midland—20½ shares	42½	½ dis.	½ dis.
South Wales—50½ shares	5	1½	1½
Staines and Richmond—20½ shares	1	—	—
Trent Valley—20½ shares	5	—	—
Trent Valley and Holyhead Junction—20½ shares	2½	—	—
Vale of Neath	2	1½	1
Waterford and Kilkenny—20½ shares	3	3½	—
Welsh Midland	2½	—	—
Wilt, Somerset, and Weymouth—50½ shares	2½	—	—
Yarmouth and Norwich—20½ shares	20	—	—
York and Carlisle	2½	1	—
York and North Midland—50½ shares	50	99	—
Ditto Selby—50½ shares	30	—	—

#### FOREIGN RAILWAYS.

Boulogne and Amiens—20½ shares	10	—	12½
Bordeaux and Toulouse and Cete (Mackenzie)—20½ shares	2	—	—
Bordeaux, Toulouse, and Cete (Espanole)—20½ shares	2	—	—

## PRICES OF MINING SHARES.

BRITISH MINES.			BRITISH MINES—continued.		
Shares.	Company.	Paid. Price.	Shares.	Company.	Paid. Price.
1024	Alfred Consols	35 30	256	South Wh. Hope	35 30
235	Andrew and Nangle	35 30	1034	South Wh. Maria	35 30
1000	Barristown	42 27	256	South Wh. Rose	35 30
4000	Bedford	28 34	10000	Southern & Western, Irish	35 30
128	Besore Lead Mine	37 30	256	St. Austell Consols	35 30
320	Birch Tin Mine	10 12	94	St. Ives Consols	35 30
8000	Blasnavon	50 40	1000	Stray Park	35 30
256	Bodmin	175 200	9600	Tamar Consols	35 30
100	Botalack	175 200	6000	Tincroft	35 30
120	Brewer	10 10	256	Ting Tang	35 30
10000	British Iron, New, Regis.	10 19	128	Tokenbury	35 30
128	Budnick Consols	30 30	1024	Trelawney Consols	35 30
100	Bulwich Cwmern	20 200	5000	Trelawney Consols	35 30
1000	Callington	19 25	256	Trencon Consols	35 30
256	Caradon Consols	45 55	95	Tresavean	35 30
256	Caradon Copper Mine	9 40	120	Trethellan	35 30
256	Caradon Mines	15 40	120	Trevinkey and Harrier	35 30
256	Caradon United	24 16-25	256	Trowlack	35 30
256	Caradon Wh. Hooper	12 7	128	Trowlack	35 30
1000	Carn Brea	15 120	4000	United Hills	35 30
114	Charlestown	200 200	100	United Mines	35 30
236	Chryse	20 20	128	West Basset	35 30
1900	Combmartin	54 44	256	West Caradon	35 30
128	Comfort	50 50	128	West Cargill	35 30
8000	Con. Trellow Mining Ass.	31 24	512	West Fowey Consols	35 30
128	Condurow	31 24	256	West Fowey Consols	35 30
256	Cook's Kitchen	5 54	256	West Fowey Consols	35 30
1000	Copper Bottom	1 5	256	West Fowey Consols	35 30
2000	Cornubian Lead Co.	3 1	256	West Fowey Consols	35 30
1024	Cosheen	44 25	120	West Trethellan	35 30
240	Cradock Moor	9 26	256	West United Hills	35 30
128	Craig Braws	120 80	256	West Wh. Friendship	35 30
500	Cubert Mine	11 30	3845	West Wheel Jewel	35 30
1024	Devon & Courtney Con.	3 34	2560	West Wh. Maria	35 30
1000	Dhurade	2 5	2560	West Wh. Mitchell	35 30
180	Dolcoath	80 80	256	West Wheel Shepherd	35 30
10000	Dorham County Coal	45 9	256	West Wheel Tolgus	35 30
128	East Pool	5 40	256	West Wheel Treasury	35 30
9000	East Tamar Consols	14 3	240	Westerlake	35 30
1	East Wheel Albert	1 3	6000	Wicklow Copper	35 30
94	East Wheel Croft	290 290	256	Wheal Albert	35 30
256	East Wheel Kitty	4 3	128	Wheal Acland	35 30
128	East Wheel Rose	50 1300	256	Wheal Allen	35 30
128	East Wheel Seton	34 15	368	Wheal Anderson	35 30
512	Fowey Consols	40 40	128	Wheal Ann	35 30
20000	Galvanised Iron Co.	10 10	256	Wheal Blencoe	35 30
10000	Gen. Mining Co. for Ire.	4 3	256	Wheal Blencoe	35 30
1000	Gedolpin	35 35	256	Wheal Blencoe	35 30
256	Gedolpin	19 118	128	Wheal Catherine	35 30
128	Gover	23 200	256	Wheal Catherine	35 30
244	Graham & St. Aubyn	30 30	136	Wheal Clifford	35 30
100	Great Consols	1000 400	1024	Wheal Concord	35 30
256	Great Caletick Moors	13 13	256	Wheal Fortescue	35 30
2560	Great Mitchell	2 2	384	Wheal Franco	35 30
128	Great Resurgor Moor	5 20	256	Wheal Gill	35 30
100	Groswindon	5 20	1000	Wheal Harrier	35 30
1000	Gunnels Lake	14 3	109	Wheal Henry	35 30
128	Hallenbeagle	50 50	109	Wheal Hope (Zennor)	35 30
1000	Hanson	5 3	256	Wheal Hope	35 30
1000	Harrowbarrow Old Mine	34 4	256	Wheal Jane	35 30
1000	Harrowbarrow Consols	2 14	256	Wheal Kendall	35 30
800	Hawkmoor	3 4	1024	Wheal Maria	35 30
6000	Heintson Down Con.	1 2	4000	Wheal Martha Consols	35 30
256	Herodfoot	15 15	256	Wheal Mary Ann	35 30
10000	Hilbert	14 14	1024	Wheal Mary (Calstock)	35 30
1000	Holmabush	14 14	256	Wheal Mary Consols	35 30
256	Ivy Tor	14 24	256	Wheal Mexico	35 30
1200	Kirkcubrightshire	14 24	256	Wheal Mary Lanivet	35 30
2048	Lamerhoe Wh. Maria	7 52	256	Wheal Norris	35 30
128	Lanarth & Penstruthal	150 150	128	Wheal Penrose	35 30
2048	Lanarth Consols	2 44	128	Wheal Pollard	35 30
200	Larkholes	1 3	128	Wheal Prospect	35 30
160	Levant	150 150	128	Wheal Providence	35 30
1000	Lewis	12 12	128	Wheal Roeth	35 30
1280	Llanymyfan	12 12	256	Wheal Robin	35 30
128	Ludcott	3 3	128	Wheal Rose	35 30
2800	Marke Valley	10 32	256	Wheal Salisbury	35 30
20000	Mining Co. of Ireland	7 12	512	Wheal Sarah	35 30
1000	Nant-A'-Nelle	2 24	99	Wheal Seton	35 30
200	Nantarrow Consols	10 16	256	Wheal Sisters	35 30
128	New East Crowndale	7 2	128	Wheal St. Cleer	35 30
128	North Fowey Consols	10 25	256	Wheal Trelawney	35 30
100	North Pool	11 40	256	Wheal Trevenna	35 30
70	North Trebregis	350 350	256	Wheal Trevenna	35 30
256	North Trebregis	24 4	128	Wheal Venland	35 30
100	North United	41 20	256	Wheal Victoria	35 30
256	North Wh. Leisure	14 6	127	Wheal Virgin	35 30
128	North Wh. Providence	24 10	1024	Wheal Walter	35 30
256	North Wh. Rose	26 25	256	Wheal Williams	35 30
15000	Northern Coal Co.	23 2			
600	Old Delahoe Slate Co.	23 45	FOREIGN MINES.		
128	Par Consols	990 990	5000	Altin Mining Company	14 14
256	Penhallow Moor	30 65	15000	Asturian Mining Co.	6 3
100	Penrhyn	15 65	10000	Anglo-Mexican Co.	6 3
128	Pen-y-Cefn Mine	50 55	3374	Ditto Subscription	25 4
1280	Perran St. George Un.	13 20	2000	Bolano	150 44
512	Plymouth Wh. Yeoland	14 34	12000	Ditto Scrip	15 5
10000	Rhymney Iron	50 25	10000	Brazilian Imperial	20 44
256	Rose Consols	10 7	12000	Cobre Copper Co.	40 29
1000	Rosehill Hill	1 34	8500	Colombian Co. Regis.	55 44
1024	Roscarrock	24 24	5000	Ditto Scrip	15 5
2560	Silver Valley	5 3	10000	Copago Mining Co.	14 2
128	Southern Consols	34 5	2000	General Mining Assn.	15 1
256	South Caradon	10 400	3051	Mexican Company	50 5
2000	South Dolcoath	2 2	12000	Mocaba & Cocons	25 84
256	South St. George	9 16	99320	R. del Monte, Regis.	28 11
800	South Harvannah	23 26		Ditto unregistered	28 11
800	South Towan	10 14		Ditto Red Debutures	av. 39
256	South Trelawney	84 174		Ditto Black ditto	17
128	South Yeoland	164 164		Ditto Loan Notes	154 117
128	South Wheel	164 164			
124	South Wh. Francis	70 70			

## LATEST CURRENT PRICES OF METALS.

LONDON, JUNE 26, 1845.

	£	s.	d.		£	s.	d.		£	s.	d.
IRON—Bar a. Wales.	0	0	8		COPPER—Ordin. sheets, lb.	0	0	0	0	0	0
„ „ „ London.	0	0	9		„ „ „ bottoms.	0	0	0	0	0	11
Nail rods	0	0	10		TIN—Com. „ blocks q. cart.	0	0	12	0	0	0
Hoop (Sta.)	11	0	0		„ „ „ bars.	0	0	13	6	0	0
Sheet	0	0	12		„ „ „ Refined	0	0	15	0	0	0
Bars	10	10	11		„ „ „ Straits	4	9	4	10	0	0
Rails, average	9	10	0		„ „ „ Banca	0	0	12	0	0	0
Welsh cold-blast	0	0	5		TIN PLATES—Ch., 1C1, box	10	11	0	0	0	0
foundry pig	3	7	6		„ „ „ IX	1	16	1	17	0	0
Scotch pig, Clyde	3	7	6		Coke, IC	1	4	6	1	5	0
Russian, CCND	0	0	16		„ „ „ IX	10	6	1	0	0	0
„ „ „ PSI	0	0	15		LEAD—Sheet „ „ „ box	19	15	20	0	0	0
„ „ „ Gouref	14	5	14		„ „ „ Pig, refined	0	21	0	0	0	0
„ „ „ Archangel	0	0	13		„ „ „ common	0	18	15	0	0	0
Swedish, on the spot	0	0	11		„ „ „ Spanish, in ld.	18	5	18	10	0	0
„ „ „ Steel, fast.	0	0	15		„ „ „ American	0	0	0	0	0	0
„ „ „ kegs	14	5	14		SPELTER—(Coke) .....	0	0	18	10	0	0
COPPER—Tie f.	0	0	92		ZINC—(Sheet) „ export	28	0	30	0	0	0
„ „ „ Tough cake	0	0	96		QUICKSILVER „ „ „ lb.	0	0	0	4	0	0
„ „ „ Best selected	0	0	96		REFINED METAL	14	15	5	0	0	0

a In kegs 1 and 2 cwt. b Net cash. c Discount 2½ per cent. d Ditto.

e In kegs 1 and 2 cwt. f Discount 3 per cent. g Ditto 2½ per cent. h Net cash.

i In bond. j Discount 3 per cent. k Ditto 2½ per cent. l Net cash.

m Discount 1½ per cent. n Discount 1½ per cent. \* For home use it is 33½ per ton.

## Original Correspondence.

rying out the scheme have been accidentally or wilfully neglected, or where it may be evident that the great object of the promoters was to obtain the deposits, for the sake of gambling in the share market without risk, and realise a harvest for themselves, regardless of whether the railway was proceeded with or not, or whether the depositors ever realised a farthing in return. Our able and respected correspondent, Mr. Thomas Mulock, in the numerous communications from him, which we have published during the past two years, continually forewarned the public, that exactly such a state of things would come to pass; and, however hard it may be upon men who have joined provisional committees with the most honest intentions, and without any idea of fraud, still, as in most cases the public have suffered from their apathy in leaving the management to a clique, whose objects would have been evident with only a little business-like energy, it is but just that those who have been duped out of their money, should recover from parties, on the responsibility of whose names they were led to join the undertaking.

## PROGRESS OF FRENCH MINING INDUSTRY.

(FROM OUR PARIS CORRESPONDENT.)

The examinations of candidates for admission to the Ecole des Mineurs de St. Etienne, take place from the 3d to 15th August next. The instruction at the school is gratuitous, and comprises everything, both in theory and practice, necessary for persons intending to devote themselves to the management and superintendence of mines.

A law suit, of great interest to the ironmasters, is at this moment pending before the Tribunal of Commerce, between Messrs. Mackenzie and Brassey, the eminent railway contractors, and the proprietors of the forges of Cruetzot, l'Aveyron, de Cazeville, and d'Allais. The facts shortly stated appear to be these—When the Orleans and Bordeaux Railway was conceded, a contract was entered into between the company and Messrs. Mackenzie and Brassey for the supply of all the *matériel*, and the execution of all the works that had to be constructed. In virtue of this contract, Messrs. Mackenzie and Brassey entered into contracts with Martin and Co., and Boignes and Co., ironmasters, for the supply of chairs, or *cousinets*, and with Messrs. Schneider and Co., for the supply of rails. The supplies (it is said) were to be for the whole line; but it was understood that, in the first instance, they should be made only for the section from Orleans to Tours. The price agreed upon was—for the chairs, 320 francs the ton of 1000 kilogrammes; and for the rails, 325 francs the 1000 kilogrammes. All this was settled on the 27th January, 1845. Subsequently, the Government insisted on the annulment of the contract between Mackenzie and the company, on the ground that it left him far too great profits—360,000*fr.*, or thereabouts. On this being done, the “statutes” of the company were authorised—that is, the company itself obtained a formal legal existence. At this time the price of iron had risen to 340 *fr.*, 350 *fr.*, and even 380 *fr.* the ton. The ironmasters then found, that their arrangement with Mackenzie was anything but favourable to their interests, and they refused to fulfil it, except in so far as regarded the section from Orleans to Tours. In defence of this refusal, they allege that they contracted with Mackenzie as representative of the Bordeaux Company; and that, when his contract with it was terminated, their contracts with him terminated also. They likewise allege, that the agreement was only binding with respect to the first section of the railway, from Orleans to Tours. Mr. Mackenzie, on the contrary, contends that the agreement was to hold good for the whole line of railway, and that it was made with him personally, and had nothing at all to do with his arrangements with the company. He, consequently, requires that the ironmasters shall be compelled to fulfil their agreements, to supply the chairs at 320 *fr.*, and the rails at 325 *fr.*, a ton, instead of at the present prices. Judgment in the case has not yet been given—the judges having thought it necessary to take a fortnight to weigh the terms of the contracts.

The Government has positively refused to authorise, “for the present,” the free trade association got up in imitation of the Anti-Corn Law League, with the view of sweeping away all Custom-house imposts. This fact shows how dependent it is on the monopolist party, and how little likely it is, that for a long time to come, the odious restrictions on our commerce, and especially on our iron, will be swept away. Very different hopes, it is true, were entertained a little while ago; but it unfortunately appears, that they were unfounded.

From returns relative to the Savings' Bank, it appears that, last year, 123,000 workmen of different trades were depositors, whilst there were not less than 81,000 miners. Considering that the mining population of France is not as 1 to 20 of the working classes, it appears, from these figures, that miners are the most economical and laborious of the labouring community.

During the week, two or three new companies, for extending the operations of old iron establishments, or founding new ones, have been started; and one of those, that was set on foot two or three months ago, has already found it necessary to demand a very considerable increase of capital. On the Bourse the transactions in mining shares are still very numerous, with a tendency rather to increase than diminish. From Monday till Saturday last the Charbonnages Belges were done at 595 to 600 *fr.*, the Vieille Montagne at 6100 *fr.*, the Stolberg at 1250 *fr.*, the Forges de l'Aveyron at 5960 *fr.*, the Hauts Fourneaux Monceaux at 2350 *fr.*, the Hauts Fourneaux du Nord at 1562½ to 1570 *fr.*

Among the great political questions of the day, is that relative to the state of the navy. Baron Dupin, peer of France, formerly Minister of Marine, has just presented to the Legislature a remarkable report on what requires to be done for, and supplied to, the navy. After dwelling upon the supplies of timber, he contends that France can supply the iron necessary for the navy at a reasonable rate, when (when?) the railways shall be completed. He says, that three years' production in France would give 1,300,000 kilogrammes of new cast-iron; 138,000,000 kil. in assorted bars; 88,000,200 kil. of sheet-iron; 13,400,000 kil. of white-iron; that a complete assortment necessary for three years' consumption of the royal navy would be 6,000,000 kil. of new cast-iron; 10,800,000 kil. in assorted bars; 4,000,000 kil. sheet-iron; 300,000 kil. white-iron; and that the navy, to make up its complement, wants 3,544,000 kil. of new cast-iron; 2,695,000 kil. in assorted bars; 1,755,000 kil. in sheet-iron; and 103,000 kil. white-iron. In copper, M. Dupin thinks that there should always be four years' consumption on hand, and recommends that France should make as large importations as England, from Cuba, Chili, &c. At present France has no copper of her own, and imports annually only about 3,000,000 kil. Lead, tin, zinc, &c., are not, says M. Dupin, much needed in naval arsenals, and what is required can be obtained from Spain, Belgium, and Germany.

Letters from St. Dizier say, that the dry weather has caused some furnaces to cease working, and the production of cast-iron, has consequently, decreased. Until the river shall rise, the price is expected to be maintained at 190 *fr.* Only one furnace, a *fers battus*, is in active operation at St. Dizier; it sells at 380 to 390 *fr.* the 1000 kilogrammes, and daily receives numerous orders. The other furnaces have stocks on hand sufficient for a fortnight, or a month. The current prices were 370 *fr.*

In one or two of the smaller coal pits, the miners have again struck for an increase of wages.

The Northern Railway was opened on Monday for the conveyance of passengers. Very few trains, however, pass backwards and forwards, and the stations nearest to Paris are not served at all. Nor is the company in a condition to convey merchandise. The Paris and Sceaux Railway, for the trial of Arnou's system, was opened yesterday for traffic. The embankment on the St. Germain Railway, for the trial of the atmospheric system, has been traversed by a locomotive. The ascent is, I believe, without exception, the very steepest that a locomotive has yet gone over.

**MINING IN IRELAND.**—A deputation from the Southern and Western Mining Company of Ireland waited upon Lord Dalhousie, on Saturday last, who received them favourably; and after a desultory conversation, as to the character of the undertaking, and the peculiar facilities for working mines in the district, said that the grant of a charter, which had been solicited, was governed by very rigid rules—that an English company, if it made a similar application, would not be considered within the class of exceptions—but that lately the rules had been relaxed in favour of Ireland. He suggested that a formal petition to the Privy Council should be lodged, stating that the subject would be referred to the Irish Government for their opinion—and adding that, though he could make no promise on the matter, he would give it his most favourable consideration.

**ARRIVAL OF SPECIES.**—On Wednesday, the steam-ship *Victory* arrived at the St. Katharine Steam Packet Wharf, from St. Petersburg, with a large quantity of specie on board, amounting to nearly 200,000*lb.*, packed in 12 large cases. It was consigned to merchants in the City.

## ATMOSPHERIC RAILWAYS—THE BAROMETRICAL SYSTEM.

Sir,—We stated, in the letter published in your last Number, that the principles on which the atmospheric system is based admit, if entirely interpreted, of reducing the power necessary to carry a train to the useful power, and a small additional amount of friction; therefrom immense advantage over the locomotive engine, the most perfect construction of which cannot but present an enormous loss. Our intention was, to explain in this letter the apparatus in which all the theoretical advantages of the atmospheric system are made use of; but finding the general attention directed, not to the means of producing the power, but to those of avoiding its loss in its passage from the engine to the train, and jealous besides of conserving to the system valuable adherents that actually imperfect results might tend to check, and the favour that the great good sense of the public has at once bestowed upon it, we shall first give, on the construction of the propelling tube, a few observations that long experiments have brought into our minds.

The practical problem in the atmospheric railway, is to construct a tube through which the power is transmitted without loss, so as to obtain on the head of the piston a power corresponding to the exhaustion in the engine-house, and to apply this power in the whole of its value to the train. A great number of various schemes have been proposed to fulfil this object; and it is necessary to introduce some general observations, by which appreciation can be made of their real value, and some light thrown on the subject. So many opposite projects would take us very far from the real solution—might even make us doubt if there be any.

There exist, in the tubes proposed, two very distinct classes: those with a continuous opening—those entirely closed. In the first instance, the piston is materially connected to the train, by a rod passing through the opening; in the second, the connection is created either by a series of mechanical pieces, disposed all the length, moved successively by the piston in its progress, and communicating to the train the power received, or by the opposition of two pieces, or wheels, disposed on the same plan, connected one with the piston, and the other with the train, and separated by a pliable elastic substance, joined to the tube, and being a part of it. The object proposed in constructing a tube entirely closed is to avoid leakage—all these dispositions are not free from it: it may take place, for instance, around the pieces subject to wear, which communicate the power; and the chance of it is increased in the head of the piston, by the addition of a space of angular form placed above the circular part of the tube, in order to receive the communicating apparatus—a cylindrical form being always much more easy to close hermetically than any other. All the air contained in this space is to be rarefied to produce exhaustion, and still the useful pressure is only exercised on the circular area; therefrom a loss which, in some projects, is considerable. It is evident that, in a system with a series of cog-wheels, the friction of the axles, and of the cogs, must take a notable part of the power, that this friction increases with the power applied, and the resistance to overcome. We doubt the effect of such mechanical means at high speed; but one of the greatest objections against such a system, is its unsafety. The idea of it may be considered ingenious,—were it adapted to another purpose, we might consider it so; but here we find its ingenuity quite out of time and place. Railways must not be assimilated to those delicate machines, in which a disorder cannot have any farther result than the breaking of a thread, or some imperfection in the manufacture produced. Railways are the great channels through which the property, the lives of society, are destined to circulate: such a precious deposit requires a more serious and secure construction; and, if accidents are an argument against locomotive engines, a system carried out by such means would, no doubt, present some of a more dreadful character.

We have no practical data by which we can judge what may be the working of a system in which the power is transmitted through an elastic material: we are inclined to think, that at high speed, any retarding of the train, together with the adherence of the elastic material to the wheels, would, in consequence of their necessary small size, cause the inner one to escape the outer, if no means are employed to keep down the latter; and these means, if employed, would cause a considerable friction. What regularity can be expected from a system in which the power capable, as we said, of being retarded or stopped in its action, receives either indirect or no reaction from the train? What will be the amount of friction in these wheels, necessarily small, and with strong axles? What will be the loss in the power, by its transmission through a body which must be thick, elastic, and (of course) compressible?

Another obstacle inherent in the nature of a tube entirely closed, is that of admitting the air behind the piston only by the end of the tube: its pressure is, therefore, lessened by all its friction in that tube. The experiments made at Dalkey induce us to estimate this loss at about one-eighth per mile of the power created by the working engine: in short, to transmit the power to the train from a piston, in a tube entirely closed, necessitates this power to pass through more or less complicated pieces of machinery, which affect its value, and the friction of which increases with the weight of the train.

Is a tube with a longitudinal opening possible?

To answer this question, we start from a fact which has all the value given by a practical demonstration. A grease valve has acted—a single reason stopped it: it will act again when the cause of its temporary stoppage is obviated. The results of Dalkey and Croydon were, no doubt, a wonder of care and patience. But such primitive means are not adequate to the exigencies of long lines. A continuous valve requires more certainty in its effect—it requires a more natural and rational construction. It must fulfil some exigencies we have laid down. [Table iii.]

If we compare the valve at Dalkey and Croydon with some other schemes, tried and proposed before and after, with that of a rope filling the opening, it has, no doubt, the advantage of having only one joint to stop—one side of the covering body being hermetically fixed, and thus only half the chance of leakage; but a valve, closed by the rapid passage of a wheel, presents too many chances of the effect of this wheel being only imperfect, or destroyed, after its passage: to act in a secure manner, it must be shut by a general and constant agent: if any cause takes it out of its place, it must return to it spontaneously; and when only small interstices will have been left between the closing surfaces, then a greasy body can be employed with advantage to fill them, and its effect will be free of any interference from the temperature.

The closing of a valve must not be affected by the atmospheric pressure created on it by the exhaustion—the only effect of this pressure must be to close it better.—It is evident that a joint can be hermetically closed with much more facility when the air on the two sides is at the same density than when there is a difference, because the closing body has then no pressure to support; but when exhaustion is produced on one side, there exists a pressure on the joint—and an atmospheric valve well closed, when no exhaustion (or only low exhaustion) is in the tube, might be moved from its closing position by the increasing pressure, and thus admit exterior air. The valve, the idea of which is taken from the human lips, is subject to this objection. To obviate it, the opening must be closed by a resistant body, capable of resisting the atmospheric pressure, and receiving from this pressure an increase of power, to compensate the greater difficulty of closing produced by exhaustion. To save both friction and wear of the closing apparatus requires, besides, its being moved as little as possible from its place by the connecting rod.

Whatever be the amount of friction of the valve and piston, the most important consideration is, that this friction should not increase with the weight of the train.

The power necessary to overcome the real friction of a properly constructed piston and valve, may be estimated at about 30 to 40 *lbs.*: this power is of very little import, and would be an imperceptible difference in the amount created on the head of the piston; but, by all the dispositions hitherto proposed, this amount of friction increases with the weight of the train, and, therefore, it is no more a small amount to be deducted from the whole of the power—but this power to be divided in the whole of its value, by a number which varies according to the special disposition of every case.—The reason of this is, that the power acting after a line, and the resistance after another to join them, requires a transversal rod, which produces exactly the effect of a lever—pressing down on one side, and lifting up on the other. The only way of avoiding this very important inconvenience, would be to apply to the atmospheric system the same principle which is followed in all machines rationally constructed; the line on which the whole of the power is concentrated—its resultant must be the same line, in which are resumed all the elements of the resistance—the resultant of the resistance.

Tubes entirely closed do not admit of this disposition; it may be brought into practice in the tube with continuous opening, by raising the tube, so as to raise its centre at the height of the centre of the wheels, cutting the axles in two separate parts, so as to allow the tube to pass between them. This disposition avoids the only chance of accident remain-

ing on the atmospheric railway—the breaking of axles; such axles can be disposed so as to present the advantages of wheels independent one from the other, without increase of friction, or liability of unsteady revolution. Other reasons—such as radiation of caloric—may exercise an influence on the point of rarefaction of the air; but this influence can, by certain dispositions, be entirely removed, especially if there is rapidity in the various operations of working.—Speed is not only a characteristic of atmospheric propulsion—it is a necessity for its advantageous working.

With proper disposition, notwithstanding the variations of temperature in the various times of the year, radiation of caloric can have no influence on the point of exhaustion.

The advantages arising from the direct application of power, and the speed in atmospheric propulsion, render its application objectionable for purposes where neither of these two conditions can be fulfilled—such as canal or river propulsion; in these cases, the resistance increases, compared to the speed, in a proportion which varies from the square to the cube: any speed higher than five miles an hour would be commercially disadvantageous.—N. A. BURNIER: *Dufour's place, June 24.*

## ON THE CONSUMPTION OF SMOKE.

Sir,—While the smoke nuisance, and the abatement of it are occupying so much public attention, it may not be out of place to explain, in your widely extended Journal, a simple plan of furnace, easy and cheap to construct, and which, for the last 16 or 17 years, I have found—however large or small the scale—to answer admirably. Many of my friends, to whom I have communicated the plan, have partially adopted it, and they find it very advantageous in practice. In the first place, it saves, in many instances, half the fuel, and produces great economy of labour to the stoker.—Secondly, it destroys the furnace very slowly indeed.—Thirdly, it consumes the greater part of the smoke; and, I am of opinion, it can be nearly, if not wholly, consumed.—The only difference between this and the usual plan of setting, is some trifling alterations in the fire-place. The fire-place of the common plan is very confined, with an immense draught; and the draught into the flue is close to the bottom of the boiler—that is, at the highest part of the fire-place: hence the heat and smoke pass rapidly round the flue, and escape into the chimney at a high temperature, imparting but little heat to the boiler in its progress—whilst the heat and smoke issuing from the chimney are immense—all of which is, of course, a total loss. On this plan, the fire-place is as spacious as the bottom of the boiler will admit; but it does not follow, that there shall be a much greater area of fire-bars than is usually employed, nor any great variation in their form—but the thinner and the closer, in reason, they are placed together, the better. The draught from the fire into the flues is at the bottom of the fire-place, on a level with the bars, instead of at the top, as in the old plan; this confines the heat immediately under the boiler, where it is more beneficially active—and the rapid combustion of fuel is hereby moderated into a slow and more perfect combustion, which gives the above advantages.

The propriety of this position for the flue is evidently a common-sense one. I will endeavour to explain the mechanical action of it—not scientifically, I know—but, I hope, in a way to be understood. The hottest air, by this plan, is always kept in contact with the bottom of the boiler (where the water or other liquid is coldest), and imparts its heat to the water, which condenses the hot air—then it gravitates to the flue, and passes off. Hence, the gases escape into the chimney, at a much lower temperature than it would be, if the draught were taken into the flue at the top of the fire-place. So, for instance, if we wanted to obtain more power from a stream of water (which is an opposite element to fire), we should construct a weir across it: this would not alter the discharge of water down the stream, but it would obtain the force of the fall at the point at which it was required. Keeping this in mind, it is fair to argue that, since heat expands the medium where it is created, that medium then ascends,—and it has the greatest effect in a direction opposite to that of gravity. Therefore, if we wish to apply it to any particular point, as at the bottom of the boiler, we should keep the heat back by reversing the position of the weir, and cause the gases to pass under, instead of over, the dam,—and, hence, the draught should be taken from the fire at the lowest point of the fire-bars. Increase of room in the fire-place is also a common-sense principle, and equally as easy of demonstration.—JAMES DREDGE: *Bath, June 20.*

**THE ELECTRIC TELEGRAPH IN AMERICA.**—A few weeks since, we published some particulars respecting Prof. Morse's improvements in the electric telegraph: the following additional information, from a letter, dated Washington, June 6, is deserving the attention of all persons interested in railways in Europe:—“I may as well give you the result of some of Prof. Morse's recent experiments on the speed of imprinting the characters of his alphabet, which demonstrate the vast superiority of his telegraphic system over all others as yet tried. The better to understand this superiority, let me say that the English telegraph shows the letter momentarily on a little revolving dial plate, which letter is lost, of course, if not observed at the time, and but 15 of these can be shown in a minute. The French telegraph also shows a sign for a letter, and can show but 12 of these in a minute, and uses two wires for this purpose, which make six for one wire—while Prof. Morse not merely showed, but imprinted (more than a year ago), 60 signs in a minute, with ease, and with one wire. Bain, of Scotland, has put in operation, for a short distance, a telegraph, and the only one in Europe which imprints. He imprints the common letter of the alphabet, by a complicated apparatus of clock trains and type wheels and inking apparatus, and all for the purpose of producing a recognisable letter. Europeans never seemed to have thought of inventing a simpler character, till Morse invented his simple alphabet. Bain professes to imprint from 20 to 25 letters in a minute—a fact which we doubt from the capacity of his instrument. Prof. Morse, by the invention of his conventional alphabet, substituting a new and easily acquired character for the ordinary letter of the alphabet, not merely dispenses with all complicated machinery, but a single key imprints, to be read at pleasure, a quantity of intelligence not within the power of any of these other systems to accomplish. The 60 characters per minute, which he formerly made, are now far exceeded. The young gentleman who operates at Washington, has written repeatedly 90, 98, 99, and at one time 101, characters in a minute. Another operator at Philadelphia has written, I learn, 106—and this with simple manipulation, as one writes with a pen. I think this will not easily be exceeded, although the professor, I understand, says that, by machinery he has already invented, he can cause to be imprinted at any distance at least 120 characters per minute. Let us allow to the different European systems for any improvements they may have made within the last year, that they can give double the quantity of intelligence which they claim to send in a minute, and the account will stand thus:—Prof. Morse's (American), 100 per minute; Bain's (Scottish), 50; Wheatstone's (English), 30; Breguet's (French), 12;—and we have in figures, at a glance, and with all the advantages allowed in favour of the foreign telegraphs, the decided superiority of the American. By the way, it was announced by the papers, a few days ago, as a recent discovery, that the professor could communicate at intermediate places along the line without interrupting the line of communication. This is no recent discovery. The professor made an experiment in New York in 1842, by which he showed that 30 instruments, which he had at hand, could be operated along a line at the same time.”

**AMERICAN LOCOMOTIVES IN ENGLAND.**—The following information, obtained from a correspondent, may be of general interest:—“The only locomotives which have been imported into England from America, were 10 or 12, obtained by the Birmingham and Gloucester Railway Company in 1839 and 1840. None have since been sent here. These engines were ordered from America because the engineer (Capt. Moorsom) thought they would suit the curves and inclines on this line better than the English arrangement, and the English houses were all that time full of orders; and were, therefore, not disposed to take engines to build on that plan. Some were, however, subsequently made on the same plan by English houses (Nasmyth and Co., Hick, Bolton and Co., &c.), which were very much superior in workmanship, to the American engines. The essential difference between the arrangement of the American and the English engines, consisted in the former being made with a much smaller driving wheel, by which they were able to take a much heavier load up the inclines; but their speed was thereby so much reduced, that the company were obliged early to purchase two engines on the English plan, to run their mail trains; and to enable them to meet the speed required by the Post-office authorities—and, ultimately, they have adopted English engines altogether, as they have sold off several of their Americans to be used as contractors' engines, and are, we believe, quite ready to part with the remainder. From this we see, on the only line upon which American engines have been used, they are all but laid aside.”

A few years ago, plate glass was sold at 12*s.* per foot. At that price the demand was 5000*ft.* per week. It is now sold at 4*s.* per *ft.*, and the demand per week is 40,000*ft.*—*Liverpool Times.*

## PROGRESS OF THE ATMOSPHERIC RAILWAY SYSTEM.

## Lab Intelligence.

## KENMARE MINING ASSOCIATION.

COURT OF CHANCERY—DUBLIN, JUNE 18.

**JOHN DILLON CROKER v. R. J. T. ORPEN, R. O. TOWNSEND, AND OTHERS.**—The bill in this cause was filed for the purpose of obtaining a specific performance of a covenant, contained in a lease made in the year 1785, from Arthur Dillon to Richard Orpen, of the lands of Ardully, and other lands in the county of Kerry, for three lives, renewable for ever. This lease reserved to Arthur Dillon, the lessor, his heirs, and assigns, all mines and minerals which might be found upon the lands, with full power to enter upon the lands, and search and dig for the same. The covenant, of which specific performance was sought, was, that it should be lawful for the said Arthur Dillon, his heirs, and assigns, to have, hold, and enjoy, by separate and distinct bonds, 200 or 300 acres, at the election of the said Arthur, his heirs, and assigns, of the demised lands (the mansion-house and orchards excepted) most contiguous to the said mines, in case any should be found therein; the tenant obtaining an acreable abatement in the rent reserved.

The ATTORNEY-GENERAL stated the plaintiff's case, and deduced title to the reversion in these lands from Arthur Dillon, the lessor in the above lease, to John Dillon Croker, the plaintiff. He stated that ores had, from time to time, been found, both of lead and copper, on these lands—and a lead mine was opened and worked for some time, and afterwards abandoned; that a copper mine had also been discovered on the lands of Ardully, and worked to a considerable extent. The mines were leased by Mr. J. D. Croker, in 1839, to an English company, called the "Kenmare Mining Association." This company had paid 10,000*l.* fine on obtaining the lease, and expended about 14,000*l.* in sinking shafts and erecting machinery—and had already sold, in the Swansea market, ore to the value of about 8000*l.* at very high prices. The learned counsel contended that, upon the discovery of these mines, Mr. Croker had become entitled to reassume the possession of 200 or 300 acres, most contiguous to them, under the provisions of the lease of 1785, which lease had been from time to time renewed. A notice was accordingly served by Mr. Croker on the defendants, in September, 1838, informing them of the discovery of the mines, and that the plaintiff had selected the 300 acres therein specified, which were stated to be most contiguous to the mines, and requiring possession to be given up to them accordingly. This notice not being complied with, an ejectment on the title was brought by the plaintiff in the Court of Queen's Bench, which was tried at the Summer Assizes of the county of Kerry, in the year 1839, when the jury disagreed, and it was then subsequently tried at the following Spring Assizes. Upon that trial, the learned judge directed the jury, if they believed a mine had been discovered, and that the 300 acres claimed were next contiguous to such mine, that they should find for the plaintiff, which they accordingly did. Exceptions were taken to the judge's charge, and subsequently argued in the Court of Queen's Bench, in Michaelmas term, 1840. That court was of opinion, that the clause in the lease amounted to a condition, and that the plaintiff was entitled to recover in the ejectment; but that, as it appeared Mr. Croker had accepted rent from the lessees after service of the notice of ejectment, it amounted to a waiver of the notice and ejectment, and they, therefore, granted a new trial. Mr. Croker was accordingly obliged to discontinue this ejectment, serve a new notice demanding possession of the 300 acres, and bring a new ejectment. This ejectment was tried at the Trillick Spring Assizes of 1842, when the judge left the same questions as on the former trial to the jury, who at once found for the plaintiff. Twenty-seven exceptions were taken to the judge's charge, which came on for argument in the Queen's Bench in 1844, when Judge Burton retained his former opinion, that the clause was a condition referring a right of entry, not a mere covenant sounding in damages; but Judges Crampton and Perrin (the Chief Justice being absent) held that it was only a covenant, and that Mr. Croker's remedy was in a Court of Equity. They accordingly set aside the verdict; the plaintiff thereupon filed his bill in December, 1844.

Mr. Jonathan Christian called proofs, and Mr. R. J. Lane spoke to evidence for the plaintiff.

Mr. Sergeant WARREN, for the defendants, contended.—1. That no real mine had been discovered.—2. That if it had, it had been already exhausted; and that, therefore, the land being no longer wanted for mining purposes, the plaintiff could have no right to resume possession of it.—3. That the 300 acres selected were not the most contiguous to the alleged mine.—4. That the true construction of the covenant was, that if mines were discovered, the lessor should be entitled to take possession of such portion of the adjoining lands as should be necessary for mining purposes, not exceeding 200 or 300 acres. He contended that Mr. Croker's purpose was to get possession of this tract of valuable land for agricultural purposes, and not at all for the use of the mines.

Mr. Pigott and Mr. Thomas Jones followed on the same side.

Mr. Monahan and Mr. Edward Orpen, for Richard Edward Orpen, one of the defendants, stated that their client was a sub-lessee of part of the lands included in the 300 acres claimed by the plaintiff; and that he had laid out a large sum in building a dwelling-house, and in other improvements to the lands, and contended that these improved parts should be excluded from the portion claimed.

Mr. RICHARD MOORE, for the plaintiff, replied; and as to the claim of R. E. Orpen, showed from the maps that it was impossible for the plaintiffs to exclude his portion, or otherwise the 300 acres would not be the most contiguous to the mines.

The LORD CHANCELLOR, having intimated his opinion in accordance with Mr. Moore's, on this point, Mr. J. D. Croker offered, through his counsel, to allow the defendant, R. E. Orpen, any sum that two respectable persons, to be mutually chosen, should fix as the actual value of the dwelling-house in question.—The Lord Chancellor said, this offer was most creditable to Mr. Croker, and relieved him (the Lord Chancellor) from a painful duty. He proceeded to give judgment to the following effect:—This case is almost altogether one as to the construction of the covenant in the lease. The first lease was made in 1780 for 61 years; 3000 acres were thereby demised for about 2200 shillings. That lease contained the same reservation of all mines and minerals, with full right to enter and dig and search for them, and reserve them to Dillon, his heirs, and assigns. The clause then went on in the very same words as in the lease of 1786, as to the right to reassume 200 or 300 acres. Look at the very small value of the land at that time, and it will afford a solution of the question, as to the right intended for the lessor. There was nothing very alarming as to the reassumption of, and let, at so low a rent. In truth, the difficulty does not arise from the construction of the instrument, but from the difference in the present from the former value of land. They were then a barren waste, and now they are cultivated fields. But the construction cannot vary; and I must now construe the clause, as if I were called upon to do so in the year 1780, and that a mine had been then discovered. I confess that, with all respect for the other learned judges, I prefer the original opinion of the Court of Queen's Bench, that this clause was a condition, not a covenant. But the parties are now bound by the law proceedings, and cannot raise this question here. It is not denied, that if this were a condition, the lessor might enter on 200 or 300 acres, as he thought proper. He could not enter on less than 200; there is not a word of less or more—and, therefore, he could not take five here and five there (a difficulty suggested by the defendant's counsel), and thus cut up the estate. It is clear, then, that if this were a condition, the lessor could enter—and it is not at all an unlikely thing to have been agreed on, that in consideration of the land being let at so very low a rent, the lessor should reserve to himself an unlimited power over all mines and minerals, and such a right to resume a portion of the land. Suppose he had reserved to himself a right to take back 300 acres, whether mines were found or not, I should, of course, have given effect to such a reservation. It has been said, suppose a mine be discovered on another part of the lands, can the lessor take possession of more land for the purposes of such mine? He may have done very unwisely, in exhausting his power as he has done, but that does not affect his right to do so. His right as to any future mines after this must receive a very strict interpretation. If, then, this be a covenant, it must be construed as it would be by a Court of Law; and if I had any doubt on the subject, it would have been my duty to send a case to a Court of Law, for instruction as to its meaning. But the learned judges have already held an opinion, in which I entirely agree, that it is a right to resume the entire 200 or 300 acres, at the option of the lessor. As to the existence of a mine, I can have no doubt; this fact has been found by the decision of two juries; and if I thought this was merely a colourable working of it, I should dismiss the bill without hesitation—but it appears that a respectable company paid 10,000*l.* as a fine on getting their lease, have expended 14,000*l.* in working the mines, and still continue to work them. They have actually received 7000*l.* or 8000*l.* for the ore sold. The lessees have no right to object, that the speculation has been unprofitable; such view is quite beside the question before the court. Has, then, this right been properly exercised here? It is very probable, that Mr. Croker had a desire to obtain this improved part of the estate, and had also a view to the house built upon it. But this question has been before both juries, the same witnesses were examined before them, and they have found that the part selected was the most contiguous to the mines. I have looked upon the map for any part equally contiguous, excluding the house of the defendant, Richard Edward Orpen, and cannot find that there is any such. My mind is quite clear, that the lands selected are the most contiguous. I do not know of any case where a tenant to part of lands, of which the conveyance has been decreed in a suit for specific performance of an agreement for that purpose, was held entitled to compensation for his outlay. He must have taken the land with full knowledge of its being liable to be taken back by the lessor, upon a contingency. If, therefore, Mr. Croker had not made the very fair and liberal offer he has done, I should not have been able to give any relief to the tenant. I am, therefore, bound to say, that the lessor is entitled to the reassumption of, the whole interest of the lessee in the 300 acres to be held by him, his heirs and assigns, as in his first and former estate. Considering the whole case, and that the plaintiff had a clear right, and the litigation that has already been had, I am bound to decree for the plaintiff, with costs. I shall declare him entitled to the same rates only from the day of filing the bill.

**HALLETTE'S ATMOSPHERIC RAILWAY.**—The model on this system, which has now been exhibiting at the Rosemary Branch, Peckham, for about eight weeks, has been visited and approved of by a great number of scientific men and engineers of eminence: among the latter, we are glad to find that Mr. Robert Stephenson has paid it a visit, as well as Mr. Brunel and Mr. Vignoles—the latter always staunch supporters of atmospheric propulsion. From the hostile position in which the former gentleman has always placed himself, in respect to this description of traction, we are glad to find that, on his recent visit, he has, to a certain extent, relaxed in his former views, and thought atmospheric applicable to short pleasure lines, and also on lines with steep gradients; it appears he was highly pleased with the superiority of the valve, over that of Clegg and Samuda's, and all others, not to say the perfect hermetically closed tube; he also thought it less liable to get out of order; but still he had two important questions to ask of its advocates—first, what would be the cost of construction and working of a line on the atmospheric, as compared with one on the locomotive system?—and second, whether the public could depend on its being regularly worked? He said, single lines for locomotives, notwithstanding the price of iron, could now be laid for about from 6000*l.* to 7000*l.* per mile, while the mere working cost had been greatly reduced. On the London and Birmingham line, although the aggregate expenses were 400,000*l.* a year, the locomotive department alone was only about 70,000*l.*—M. Hallette, and other gentlemen who support the atmospheric system, replied to these observations: in the absence of very minute calculation, there was little doubt on their minds that the cost would not exceed about 6000*l.* per mile; while, as to the working cost, it was immensely in favour of the atmospheric system, and the more frequently the trains run, the expense became proportionably diminished.—Mr. Stephenson also alluded to the effects of accidents to the stationary engines, which he considered would take a long time to repair, and, consequently, stop the trains running. Now, on the locomotive system, this was prepared for: on the London and Birmingham line, for instance, they had 70 engines always at hand, on different portions of the line, to act in case of accident, and those would shortly be increased to 130.—These objections were fully met: M. Hallette proved that an accident to a stationary engine could be instantly repaired. Of course, to be prepared for any accidents, two boilers (as is the case in most large establishments) would be erected to one engine—one to be in immediate readiness in case of accident, cleansing, or repairs of the other; and that duplicate parts of the different portions of the machinery are ready to refit in the shortest time possible; while Mr. S.'s statement, of 130 engines on the Birmingham line having to be kept in reserve, but shows the enormous dead-weight on the capital, obliged to be resorted to, to provide against accidents on the expensive and dangerous locomotive system. We are, however, glad to find, that this gentleman fully concurred in the vast superiority of the atmospheric system as to velocity and safety: the velocity, he considered, was unlimited, while on the locomotive principle, as far as scientific men could see, the maximum had been obtained; still, although he thought the atmospheric tube, as now improved, might be considered perfect, he did not think it commercially superior to the locomotive system—the most important consideration in a commercial country like England. Both Mr. Brunel and Mr. Vignoles have a high opinion of M. Hallette's system; and we hope, therefore, soon to see it in operation on a line of sufficient length to prove, and we doubt not such would be the result—its great superiority in efficiency, economy, and, indeed, in every respect, over all other atmospheric modes of traction. Mr. Wm. Cubitt, who saw the model at work at Arras, we hear, was also very favourably impressed; and was of opinion, that, if any atmospheric system was tried in France, it ought to be that of M. Hallette's. Mr. Samuda, and assistants, have also been amongst the visitors at Peckham.—We are glad to observe, that the first meeting of shareholders in the new company, formed to carry out, in the most effective manner, M. Hallette's invention, is to be held, on Thursday, the 9th July next—of the proceedings at which we hope to be able to give a most interesting report.

**RESILIENT ATMOSPHERIC RAILWAY—CLARKE AND VARLEY'S PATENT.**—The adaptation of the pressure of the atmosphere to railway propulsion, which was first brought into really practical operation by Mr. Clegg, and which is the only plan at present in full working practice, has operated upon the inventive faculties of the age, and produced numerous plans, more or less successful, for obviating the defects of the system, as adopted on the Dublin and Kingstown, and London and Croydon lines. These various plans we have duly noticed, as they have come before the public; and we now proceed to describe another method, patented by Messrs. Clarke and Varley, and named by them as above. These tubes, instead of being cast (as is proposed, we believe, in every previous plan) are composed of rolled iron, and may thus be described:—A sheet of well rolled or hammered iron, of (say) 6 ft. long, and of sufficient width to be about 2 in. more than necessary for a tube of the desired diameter, has about an inch turned up at right angles; it is then rolled up, and wrought until it forms a pipe—the flanges turned up forming the longitudinal lips, and which are now kept closed by the elasticity or resilience of the tube itself, and hence its name. These lips are lined with leather, which is fixed to the iron by means of Jeffries' marine glue, and form, in every respect, a perfect air-tight joint. The tubes are perfectly plain from end to end, and in laying them they butt against each other; and a strap of the same metal, about 4 in. broad, is lined with leather and marine glue, and screwed up tight to the lips with bolts and nuts—thus forming a perfectly air-tight joint, and a perfectly cylindrical interior; besides these braces there are, at proper intervals, guards curved to the outside form of the tube, moving underneath on pivots, and rivetted to the lips at top—thus, while they act as a stay, they give to the slightest opening of the lips, and do not increase the friction on the passing of the piston. The coupler, connecting the train outside with the piston, is a section of a cone from the apex to the base; the apex being sharp, opens but a small portion of the tube, and thus does not require the piston packing to be far in front—while the broader hind terminus keeps a sufficient opening to allow of the free admission of air behind the piston, for its propulsion. The simplicity of the formation of these tubes, and the light weight of metal employed, must render their first cost highly economical: it was stated to us that a 12-inch tube could, without any danger of collapse, be constructed of iron  $\frac{1}{16}$ th of an inch in thickness, requiring 18 tons to the mile, which, at the present price of 12*l.* per ton, gives 216*l.* per mile for the material; and, from the facility of fixing the several details of flaps, stays, &c., the cost is calculated at considerably less than one-half that of the lowest of the present proposed plans. Of the working, we can only say that, for the short distances laid down, and the confined nature of the apparatus as at present constructed, it perfectly succeeded—a heavy carriage ascending with ease an incline of 1 in 6, at a rapid rate; but, in the absence of any data as to amount of power required to overcome friction, &c., we cannot form any conclusion as to its real capabilities—indeed, it would require a much longer line (though the models are full working size) to test its real power; it appears well adapted for the raising heavy materials from mines.

**TAYLOR'S ATMOSPHERIC RAILWAY VALVE.**—This is a simple (and would, no doubt, prove in practice, to some extent, an efficient) mode of adjusting the longitudinal valve, and does not depend on any sealing composition to secure perfect closeness. The tube is cast with a considerably wide longitudinal opening, and strengthened by a flange on each side; to each of these flanges is fastened a continuous leather flap, hinge-like, of a curved form, to complete the interior cylindrical form of the tube; this leather is covered by metal plates, or scales, which, having the leather turned over their front edges, on folding together, form an air-tight joint, with no more grease than is sufficient for lubrication, as the piston coupler passes; the weight causes the valve leaves to fall, and, on exhaustion, the external pressure hermetically seals them.

**EXPANSIVE POWER OF STEAM INCREASED BY HEATED AIR.**—Mr. D. Wilkinson has discovered a simple process, by which air is injected into the boiler at a temperature of from 600° to 800°, by which a vast saving is effected in the consumption of fuel, and, at the same time, the power of the engine powerfully increased. This object is effected by the insertion of an iron tube, bent into a serpentine form, over the glowing part of the fire—one end being fixed into the boiler above water level, and the other connected with an air-pump, attached to the engine—by which plan, although only a 10-inch cylinder and 12-inch stroke, the saving in fuel was from 5 to 7 cwt. of coals per day for several weeks. The following experiment also proved its complete success:—A cock was attached to the air-pipe, and the pressure in the boiler, when the air turned off, remained at 16 lb.; when the hot air was let in, the pressure increased in a few minutes to above 30 lb.; and this under every disadvantage, as the boilers ought to have been made proportionably smaller, with other modifications required by this new source of power.

## MUNTZ'S YELLOW METAL FOR SHEATHING SHIPS, &amp;c.

JUDICIAL COMMITTEE OF PRIVY COUNCIL—JUNE 20.

[Before Lord Brougham, the Master of the Rolls, the Chancellor of the Duchy of Lancaster, and the Judge of the Admiralty Court.]

**MUNTZ'S PATENT.**—This was an application for an extension of Mr. Muntz's patent, for the manufacture of metal for sheathing of ships, composed of 60 per cent. of copper, with 40 per cent. of zinc. The courts of law and equity (with our own frequent remarks) have rendered familiar to the readers of the *Mining Journal*, the value of the invention—the patentee having been compelled to apply to them for protection. On a former day the case was opened by the Solicitor-General, and evidence was now given on behalf of the patentee.

Sir T. Wilde, Mr. M. Hill, and Mr. Cowling appeared to support the application, which was opposed by certain parties, represented by Mr. Bethell, Mr. Knowles, and Mr. Serjeant Channell. Mr. Waddington, in the absence of the Attorney-General, watched the proceedings for the Crown.

Among the witnesses called, one of the most important was Mr. Marriot, the London agent, who entered into a lengthy detail of the proceedings of his employers, such as the purchase of the metal; the houses which chiefly manufactured it for use—viz.: Vivian and Co., Williams and Co., and Symonds and Co.; what was the cost when ready for use; the competition to which the patentee had been subjected by the use of copper only; and since the metal had been tested by the experience of several years, and its superiority over copper had been found, not an open violation of the patent had taken place. The witness also stated, what he believed to be the amount of metal sold; that of late years that amount had greatly increased; that his commission for what he had sold in London was from 1200*l.* to 1400*l.* during the last year; that he had been appointed the Liverpool agent within the last 12 months, and his commission was about 300*l.* for metal sold at Liverpool; that he was paid 2*l.* per cent. on the value.—Lord BROUGHAM: Suppose that the patent no longer existed, would not Mr. Muntz have an advantage over other competitors in the market, from his long experience in the business and the connection which he had formed?—Witness: Undoubtedly.

In reply to further questions put by Mr. HILL, he stated that the houses which had manufactured the metal would likewise have an advantage over other houses that had had no experience in such manufacture; that sometimes great difficulty had been felt in obtaining metal, and that many valuable orders could not be executed. In re-examination, he mentioned several facts, tending to show that the profits were not so large as had been represented; and that it was only since experience had proved the vast superiority of the patent metal sheathing in all parts of the world, hot as well as cold climates, to copper sheathing, that the sale had been large and remunerating. In short, that an extension of patent was essential, to obtain sufficient remuneration for so valuable an invention.—Mr. Cooper, the eminent chemist, was next examined. His evidence was of a scientific character. He considered the quantity of copper and zinc combined to form the metal was most happy; a variation of 2 per cent. in either of those metals would render it less valuable. The being hot-rolled at a certain amount of heat, was also essential. It required the copper to be in a pure state. There was a proper degree of oxidation only to be obtained by the process adopted.—Another witness, also a professed chemist, gave similar testimony. In the course of the examination of a gentleman named Prosser, who had spoken of a purer state of copper being necessary for making the metal than the copper used in former times—Lord BROUGHAM remarked, that had nothing to do with the matter, for it was not pretended that Mr. Muntz had discovered the purification of copper. True it was he used it, and it might also be true that copper in that state only—the purer state—was absolutely necessary for the metal in question.—Mr. Prosser said, that no book until 1823 contained any account of the more pure copper manufactured in the present day. He said, moreover, that unless the pure copper were used, the process could not be carried on for forming the new metal. Zinc had likewise undergone great improvement. It was now made in a much less adulterated state than formerly.—Mr. Young, a shipowner, stated that he considered the invention one of great public utility, and that the copper sheathing was used to a considerable extent in the merchant service. He further said, it was not adopted in the Royal Navy, and added, because Government were the last to adopt improvements.—It being now 4 o'clock the case was adjourned without a day being named for re-suming the hearing.

The evidence, it is understood, in support of the application, is all given that is intended to be offered, except some extracts from the trading-books.

## BOWLING IRON-WORKS, YORKSHIRE.

VICE-CHANCELLORS' COURT—JUNE 25.

**STURGES v. PALEY.**—This was a motion for the payment out of court of a sum of 10,000*l.*, being one-sixth part of the funds of a company entitled the "Bowling Iron Works," at Bradford, in Yorkshire, to the credit of the plaintiffs in the suit, instituted for the winding up the affairs of the company, which had been established for 40 years, and had now expired by effluxion of time. A reference to the master had been ordered, but all the answers had not come in. Several of the members of the company were dead, leaving children, and some were married women, and all, both plaintiffs and defendants, concurred in this application, except a gentleman named Pollard, who was the holder of six shares as one of four trustees, in whom 24 shares were vested, the company consisting of 120 shares; and the motion now made asked a direction, that the receiver in the cause should pay out to the parties applying the 10,000*l.* in question.

Mr. KOB, Mr. J. PARKER, and Mr. DANIEL, for the plaintiffs, argued that, although the cause had not come to the hearing, the sum sought to be paid out was only one-sixth; and there being no question to be decided at the hearing, there was no objection to this application—a compliance with which was of the utmost importance to the parties, who all concurred, with one exception.

Mr. Bethell, Mr. F. Walford, and Mr. Amphlett, appeared for all the defendants, except Mr. Pollard.

Mr. C. P. COOPER and Mr. ROGERS appeared for Mr. Pollard, and contended, that, this being an adverse suit, it was impossible to make this order; the rights of the parties not being finally ascertained, the application was premature.

The VICE-CHANCELLOR thought that it would be much better that this matter should stand over until the hearing of the cause.

## LITERARY NOTICES.

*Manual of Practical Assaying: intended for the Use of Metallurgists, Captains of Mines, and Assayers in General.* By JOHN MITCHELL, Member of the Chemical Society. London: H. Baillière, Regent-street.

The vast extension which has taken place in mining operations during the past few years, and the increased facilities which science has placed within reach, for the development of the hidden metallic treasures of the earth, have raised a spirit of enterprise and research, which is fast extending to all quarters of the globe. Notwithstanding which, and the rank that mining, and the English miner, holds among the nations of Europe, no work, suitable to the advanced state of modern science, has yet appeared, exclusively devoted to the elucidation of the processes to be employed in ascertaining the richness of metal of any sample of ore—or, in other words, a complete treatise on mineral analysis. It is perfectly correct, as the author observes, in his Preface, that the knowledge of assaying is confined to comparatively a very few individuals; and, having no suitable text-book for his pupils, a portion of the pages under notice were penned for this purpose; but a work on such subject being a desideratum, the original plan was altered, and extended to its present form—that of a manual, embodying information in every branch of assaying, either by the humid or dry processes. In the work before us, the author has well fulfilled the task undertaken—omitting, as far as possible, those technical terms, which but embarrass the learner, while the proper chemical terms are retained and explained; and a description of the apparatus required, their mode of use, &c., that the most uninitiated will derive the greatest profitable instruction from its perusal; and, as a text-book for the practitioner, will prove invaluable.

The nature and order of the contents are as follow:—1. Description of mechanical and chemical operations.—2. Furnaces, fuel and crucibles.—3. Fluxes, their properties, preparation, and use.—4. Essay on the blow-pipe.—5. Action of fluxes on the same minerals.—6. Method to discriminate many minerals by means of the blow-pipe.—7. Humid analysis, the precise amount.—8. A copious table to ascertain, in assays of gold and silver, the precise amount.—In ounces, pennyweights, and grains—of the metal contained in a ton of ore, from the assay of a quantity given.—We shall avail ourselves of an early opportunity to enter more fully into the merits of the work, and give some detailed extracts.

## ABSTRACT OF PATENTS GRANTED IN JUNE.

N. Defries, St. Martin's-lane, for improvements in gas meters.  
R. S. Westmacott, John-street, Bedford-row, for an improvement in the construction of rotary steam-engines.  
H. L. T. T. Von Uster, college of Civil Engineers, Putney, for improvements in apparatus or machinery for measuring and indicating the distance travelled by wheel carriages.  
W. Stubbs, and J. L. Grills, Llanally, South Wales, for improvements in locomotives and other engines and carriages.  
W. C. S. Percy, Manchester, for certain improvements in the manufacture of bricks, tiles, chimney-pots, and other similar articles.  
J. C. Robertson, Fleet-street, London, for certain improvements in railways and railway carriages.  
G. Lowe, Finsbury-circus, of an extension of a patent for increasing the illuminating power of such coal gas as is usually produced in gas-works; also, for converting the refuse products from the manufacture of coal gas into an article of commerce not heretofore produced therefrom; and also, of a new mode of conducting the process of condensation in the manufacture of gas for illumination.  
R. Retlie, Glasgow, for certain improvements in the manufacture of fuel, parts of which improvements are applicable for the purposes of purifying, compressing, or extracting vegetable and other substances, and fluids, and in the machinery or apparatus to be used for the same.  
W. Cornack, Thames-street, Greenwich, for improvements in obtaining motive power.  
H. Austin and T. W. Rammell, Walbrook, City, for improvements in wood, mosaic, and tessellated work.  
S. T. Garrett, Cliff-hank Lodge, Stoke-upon-Trent, for certain improvements in cement, bricks, tiles, quarries, slabs, and artificial stones.  
W. M. Hall, Leeds, for a certain improvement, or certain improvements in, and applicable to sliding gas pendants, lamps, tustres, and chandeliers.  
J. George, Chelsea, Middlesex, for improvements in the construction of houses, buildings, and other erections.  
W. T. Nesham, London Dock, for certain improvements in the apparatus and mode of applying power for raising and lowering weights of heavy bodies.  
A. Lord, Allerton, Cheshire, for certain improvements in furnaces and the use of steam-boilers, for the purposes of consuming the smoke and economizing the fuel.

## Proceedings of Public Companies.

## MEETINGS DURING THE ENSUING WEEK.

**MONDAY**.....Asturian Mining Company—offices, at One, Bullin Street, Glasgow.—George and Vulture, Twelve for One.  
**TUESDAY**.....South Australian Banking Company—offices, at One, South Australian Company—offices, at One.  
**WEDNESDAY**.....Mining Company of Scotland—offices, at Twelve, European Gas Company—offices, at Two, Sambre and Meuse Railway—London Tavern, at One, Clergy Mutual Assurance Society—offices, at Two, Kensington Canal Company—King's Arms Tavern, Kensington, at Eleven, Trent Valley, Midlands, and Grand Junction Railway—offices, at Two, Royal Exchange Assurance Company—offices, at Twelve.  
**THURSDAY**.....Devon and Courtney Consols Mining Company—Globe Inn, Plymouth, London Dock Company—offices, at One, West Flanders Railway—London Tavern, at One.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

## BANK OF AUSTRALASIA.

The annual meeting of this company was held at the new establishment, in Austinfrans, on Monday, the 22d inst., C. H. FOSTER, Esq., in the chair.—The SECRETARY (Mr. Milliken) read the report of the directors—the substance of which was, that the profits arising from exchange operations had been greatly diminished. The bank had been subjected to two irksome and expensive trials in respect to their claim from the Bank of Australia (namely, 150,000l.); in the first of which, the jury were discharged from being unable to agree on a verdict; in the second, the justice of the claim of this company was completely established, but the verdict was taken in such a way, that a question might be raised on appeal before the Privy Council, for which steps had been taken by the directors, and they were persuaded that this process would be attended by ultimate success. The undivided profits in October, 1844, were 102,966l. 7s. 10d., to which were to be added the last year's net profits of 31,083l. 6s. 1d. There was a sum of 109,307l. 0s. 7d. applicable to the payment of dividends; but, looking to the contest with the Bank of Australia, and the probable development of further losses, the directors advised, for the present, a suspension of dividends. Still, the business done was of a safe and legitimate character; the deposits had increased, and the properties held in security for debts had improved in value.—After some discussion, in which Mr. J. Wilson, Mr. G. R. Robinson, Mr. Newson, Mr. McDougall, Mr. Brownrigg, Mr. O'Farrell, and others, took part, the report was agreed to, and three directors were re-elected, when thanks were voted to the directors, and the meeting adjourned.

**CANADA COMPANY.**—A half-yearly general court of the proprietors of this influential company was held on Thursday, the 25th inst., at the offices, in St. Helen's-place, Bishopsgate-street, for the purpose of declaring a dividend, and on other affairs.—CHARLES FRANKS, Esq. (the governor), was in the chair;—the minutes of the last court having been read by Mr. PERRY (the secretary), the GOVERNOR proceeded to make some observations relative to the general business of the company, which may best be understood from the subjoined statement:—Sales, 3767 acres Crown reserves; 3621 acres Huron tract—7388; leases, 12,066 acres—making a total of 19,454 acres.—Receipts to 25th May, 23,415l. 4s. 10d.—A dividend was declared (at the rate of 6 per cent. per annum) for the half-year to July next and after.—Sir J. EASTHOPE made a few remarks upon matters before the meeting, and described the very satisfactory position in which the company stood.—The court then adjourned.—[There was no reference made to the subject of the corn laws, or the effect which the alteration in the duties may have upon Canadian agriculture.]

**CALEDONIAN RAILWAY.**—We have, from time to time, noticed the progress of certain distant portions of the Caledonian Railway; and with the view to ascertain the state of the works near our own doors, we travelled, on Saturday last, over the seven miles of the line between Carlisle and the Esk, at the iron bridge, on the Glasgow road. The contractor, Mr. Burgess, commenced operations only in March last; and, under his able superintendence, the cuttings and embankments have been put in considerable forwardness. Of the former, those at Kingmoor and Blackrigg are the deepest—one being 42 ft., and the other 21 ft. in depth. Upon both of them a large force of men is at work, and rapidly effecting a thoroughfare. A third, at Ann's Hill, and about 40 ft. in depth, has not yet been commenced—the contractor not having got possession of the land. The embankments are nowhere heavy on this portion of the line; and in their formation there have been no drawbacks in sinking, or in "slips"—the material of which they are formed being of a solid and binding nature. The gradients are easy—about 1 ft. in 1100; and, with the exception of a curve about 1½ mile from the Esk, the line is perfectly straight. About 200 men and 12 horses are at work, and have been since the first sod was turned; and it is expected, that in the course of a month, 2½ miles at the north end of the contract will be ready for permanent rails. The principle gangs are concentrated on the cuttings at Blackrigg and Kingmoor; and, by the time these are completed, a temporary wooden bridge will have been thrown over the Eden, and the Caledonian line be in sight of Carlisle. The permanent bridge, of course, will not be commenced until the Deviation Act has passed; and it is rather an unfortunate circumstance, that its passing has been delayed, as the low state of the river, for the last two months, would have been highly favourable to the progress of the masonry. The railway will be a fortunate accident for many of the landowners through whose estates it passes. Not to speak of the handsome sums they have been paid for the portions required, they will indirectly reap profit from improvements effected by the side-drains of the railway; drains which they would not have been at the expense of forming, and which will carry from their land the immense pools of water by which it was rendered, to a great extent, useless.—*Carlisle Journal.*

**LAW OF LIABILITY.**—The following is a copy of the opinion of a Queen's counsel just taken place, on some points arising out of the transactions of a railway company which has withdrawn its bill. The questions are so shaped as to render a statement unnecessary.—Question 1: Are the original subscribers, who have lately sold their scrip, still liable to unsatisfied creditors?—Answer: They are. Question 2: Are they liable for such further calls as may be made?—Answer: This depends upon whether the directors and other subscribers have accepted the purchasers in their place, and so released them. Question 3: Will the Court of Chancery compel the purchasers to indemnify the sellers against their liability to creditors, or for calls?—Answer: It will not, unless there were special agreements to that effect. Question 4: The Joint Stock Company Regulation Act, 7 and 8 Vic., c. 110, sec. 26, prohibiting the sale of shares before complete registration, are not sales, the company being only provisionally registered, illegal? If not, are not such sales illegal upon other grounds?—Answer: It has been determined, that the above section does not apply to railway companies. The circumstance, therefore, of the company being only provisionally registered, is immaterial. The sale of railway scrip does not appear to be illegal, notwithstanding there are some dicta in the books not favourable to such a transaction. But though the sale be not illegal, yet it will be seen, from my answers to the other questions, that the result of it is different from what probably most original subscribers have anticipated. A sale of railway scrip, in the way usual in the City, merely creates the relation of trustee and cestui que trust between the original subscriber and the purchaser, and by no means relieves the former from responsibility as regards other persons.

**BREAK OF GAUGE EXPEDIENTS.**—The following is a copy of Major-General Pasley's "Report on Captain Powell's Patent Sectional Transferable Railway Carriages for carrying Goods, either on the Broad or Narrow Gauge."—Captain Powell, of the Grenadier Guards, called upon me with models and drawings to explain the patent sectional transferable railway carriages proposed by him for conveying goods on railways, which consist of covered boxes, or bodies—two of which, placed longitudinally, will fit upon a truck or under-carriage, having two pairs of wheels suited to the narrow gauge; whilst three such bodies, placed transversely, will fit upon a truck having three pairs of wheels suited to the broad gauge of the Great Western Railway. He proposes that these bodies shall be conveyed from the warehouses of manufacturers and others, previously packed by the owners themselves, on common carriage frames with four wheels drawn by horses; and that, when they arrive at a railway station, they shall be transferred to the truck, belonging to whichever gauge is used thereon; and under the supposition of their making a journey on a line commencing with one of these gauges, and arriving at a station where there is a break of gauge, they may be transferred from the trucks of a narrow gauge line to those of a broad gauge one, or vice versa, at a crossing of the two lines made for the purpose, from whence they can be turned into the new direction required, by means of common turning tables. This arrangement will require the owners of goods to provide themselves with carriage-frames and moveable bodies for the purpose, and will also require new trucks to be fitted for railway use to receive such bodies. The latter are proposed to be moved by means of small pulleys from one carriage, or railway truck, to another, guided by little rails, and are kept in position by moveable ends and sides, first to be let down, and afterwards turned up and pinned; whilst they are prevented from jumping by dovetailed grooves, which, in the small models exhibited by the inventor, admit of those moveable bodies being turned upside down without their falling off. He considers, that it would be very advantageous for the Government to have carriages and moveable bodies of this description for gunpowder and other stores, as well as for baggage of troops. Very great accuracy would be required in all the fittings proposed by him, which are very ingenious; but as to how far they might answer in railway practice, I cannot venture to give an opinion. I recommended him to apply to some railway company to give him an invention a trial, which he says he has done by reference to the Great Western. He wished me to recommend it, which I declined—as I informed him, it had been the rule of this department not to urge the adoption of untried inventions, involving expense by any railway company; but that I would report to your lordship upon it, which I now do. It would be difficult to explain more than the general principle of Captain Powell's arrangements by words, even with the aid of drawings; but, should your lordship wish to form a clear idea of them, the models prepared by him will enable you to understand them.

**NEW LOCOMOTIVE.**—An experiment of some interest was made a few days since on the St. Germain Railway, by a locomotive on a new principle, which drew a train of 80 to 40 tons over an incline of something less than 1 in 30, five-eighths of a mile long, at a rate of about 25 miles an hour; and we can consider this trial important, as it may possibly cause a modification of the laws affecting the construction of railways, as, if the inclines can be overcome so easily, it must reduce the cost of railway works: some new trials are to be made to determine the power, speed, and consumption of fuel of this new locomotive. We are indebted for this new invention to M. E. Flachet, engineer-in-chief of the Versailles and St. Germain lines.

**CORNWALL RAILWAY.**—On the motion of Sir C. Lemon, that the Saltash branch of the Cornwall Railway bill be read a third time, Mr. Duncombe presented a petition against it, and Captain Berkeley proposed a postponement of the third reading, until certain papers should be placed in the hands of members; he complained of the bridge over the Tamar, as it would interfere with the navigation.—Lord Morpeth had never heard of so unnecessary an interference with a private bill; it was a measure of great importance, and ought to pass into a law.—Mr. Hume thought a line might be had to Plymouth, without interfering with the Saltash navigation; the question was one of great importance, and ought to be postponed for a year, if necessary, that it might be fully considered in all its bearings.—After some further conversation, the House divided; when there appeared for the motion, 193; against it 18;—majority, 175. The Lords of the Admiralty have no objection to the Saltash Bridge, provided there are four arches, the two centre ones to be 300 ft. span each, and 95 ft. clear in height above high water at spring tides. Mr. Walker has made a long report on the subject, in which he expresses an opinion, that such bridge would not be objectionable, but a less height would be too low. Mr. Brunel, however, has written to the Secretary of the Admiralty, stating that such conditions are tantamount to a defeat of the bill, and requesting reconsideration, as 85 ft. is the utmost in the power of the promoters: this was, however, previous to the above decision in the House of Commons; and there is no doubt, that the subject will now be arranged to the satisfaction of all parties.

**WEST CORNWALL RAILWAY.**—On Monday last, Mr. Cockburn, Q.C., addressed the committee against this line. He contended that it was wrong to consider it a local scheme only, for the through traffic between the metropolis and West Cornwall was by far the greatest importance, and much more to be looked to than any which might exist between Penzance, Truro, and Falmouth. This line left the rich agricultural district of Helston quite without accommodation. Helston district, though itself peopled by only 10,000 inhabitants, was yet the market to which upwards of 35,000 resorted. The best line would be one which passed through, or close by, this important part of the county. The adoption of the present Hayle Railway ought, in itself, to prove fatal to this scheme. That line, in 1836, was constructed, but as a mineral line only, to be worked by horse-power—it being, by its curves and gradients, wholly unfit for passenger traffic, and to be worked by locomotives. It had not proved by any means a profitable speculation, as the liabilities already incurred amounted to 35,000l. The promoters of the present scheme proposed to incorporate with their own project, because the proprietors were influential people in the district, and who would give their assistance and co-operation to the West Cornwall Railway, on the condition that their own bad lines should be taken off their hands. Last year, when this project was brought forward, the promoters proposed joining this Hayle Railway on a level, and thus give great accommodation to Hayle itself; but now, as the junction was to be 23 ft. above the level, they would have to resort to a "lift," to transfer the goods from the one to the other line. The fact was, the interests of West Cornwall, and of the public, had been sacrificed to get rid of the opposition of the two monopolists at Hayle, and the monopolising company at Portreath, by whom, as they had partitioned the county out, the whole mining districts were supplied with coal. The ruling gradient was 1 in 60, and even to obtain this they were obliged to "pile Peling on Ossa," by piling up an embankment of 60 ft. high, over another of 30 ft. in height. This line would be carried through the very heart of the town of Redruth, in a most objectionable manner. The main street leading to Falmouth is crossed on an embankment 30 ft. high, and the street leading to the Truro road would be traversed in a deep cutting, so that there would be no communication between its opposite sides except on bridges. This must seriously injure the town. Petitions signed by 900 inhabitants, of whom 90 were electors, had been presented against it. The proposed Central line would pass it to the north, without doing the place any injury. On the Falmouth branch, there was the gross engineering absurdity of a gradient of 1 in 40, from one end to the other of four miles together, with curve of less radius than a quarter of a mile. In the Central scheme both gradients (1 in 80 as a maximum) and curves were most favourable. Mr. Brunel had set upon the Doubleboys branch of the Cornwall line, as the very best he could suggest for a central communication, yet that very branch had been rejected by the committee; it was quite clear, therefore, that even of their best line they could make nothing. It was also important to consider the expense of working such steep gradients; for though, doubtless, they might be overcome, the cost of doing so was great. The learned counsel concluded his address, by expressing a hope that the committee would not be led away by the argument his friends opposed to him might adduce, that the Central line had in two successive years failed before the Standing Orders committee, and, therefore, the next Cornwall bill ought to pass. If it was substantially, as he alleged, bad, it ought to be rejected; he, therefore, trusted that the committee would postpone this question until next year, by throwing out the proposed bill.—Mr. M. Smith replied with very great ability, recapitulating the evidence in favour of the proposed bill, commenting on the opposition testimony, and very successfully rebutting the arguments of Mr. Cockburn.—The decision of the committee was—"That the company bind themselves to construct a branch to Normaymore's-wharf within two years, if they can obtain the necessary consents, and to construct and purchase a wharf, with a frontage of at least 2000 ft., on the east side of the estuary at Hayle, and that the promoters bring up clauses to that effect. The same provision to be inserted as in the Cornwall bill for authorising the Board of Trade to require the narrow gauge on the main line from Truro to Penzance. The clauses will be gone through to-morrow (this day), when we hope to be able to state more accurately the decision of the committee.

**RAILWAY TRAFFIC.**—From our official returns, it appears that the amount of traffic, for the last week, on nearly 1800 miles of railway was 152,480l., thus accounted for:—93,388l. for the conveyance of passengers only, 30,439l. for the carriage of goods, and a remainder of 28,653l. for passengers and goods together, not respectively apportioned; being an increase over the corresponding week of last year of 16,781l.—*Railway Chronicle*, of this day.

**AUSTRALIAN MINES.**—The wealth of the Burra Burra Mines, now so generally acknowledged, receives additional confirmation from the occurrences of each succeeding week.—641 tons of copper ore have been put on board the vessels now about to sail for England; the great capabilities of the mines are more apparent than ever; and the favourable preponderance of public opinion, influenced as it is by almost unanimous report, has been further exemplified by the recent sale of Mr. Solomon's 40 (5l.) scrips, which realised 1000l., being 400 per cent. advance. It is asserted, that shares are now saleable at a still higher price; and if 25l. is henceforth to be considered the minimum price in the colony, it is impossible to foresee the effects which may be looked for beyond it. The Burra Burra men, who came into town, on leave, to spend the Christmas holidays, have nearly all returned; and we may expect soon to witness a large augmentation of the already wondrous weekly production.—*Australian paper.*

**VALUE OF ANTHRACITE COAL ASHES.**—In a former Number, one of our correspondents gave an excellent article on the value of anthracite ashes for corn. Since this, we understand they were applied on the grass lands in New Jersey, last spring, at the rate of 50 bushels per acre; and notwithstanding the unprecedented drought, they were the means of doubling the crop of grass. As there are more or less hard cinders in these ashes, after spreading them on grass lands, it would be well to pass a roller over the meadow, in order to sink the cinders in the ground, out of the way of the edge of the scythe. Anthracite ashes can be had in the city for the mere cost of gathering, and in some instances the corporation carts will deliver them on the dock, gratis. We hope to see them no longer wasted in the streets of New York.—*American Agricul.*

**PROBABLY GLUT OF GOLD.**—We find it stated, in a French scientific paper, that Siberia contains gold in such abundance, that its discovery is likely to produce a financial revolution in Europe similar to that which took place on the discovery of Peru. In the period of the last 14 years, the produce of the gold mines in that country is said to have doubled.—11,000 persons are daily employed in washing the mineral; and three times the number could be so occupied if the hands could be found. Nothing but this want of labourers, adds our authority, prevents the markets of Europe from being filled with the gold of this rich deposit.—*Liverpool Albion.*

**ROYAL POLYTECHNIC INSTITUTION.**—We had the gratification of hearing an admirable lecture by Dr. Ryan, of this establishment, on the subject of diving and other submarine operations, which the learned lecturer divided into two heads—first, the physical difficulties attendant upon diving; and, secondly, the means suggested by the ingenuity of man for overcoming those difficulties. Under the first head, he gave a clear and concise view of the theory of respiration, which he rightly termed the most important act of our existence; and proceeded to explain the action of the oxygen of the air in converting venous into arterial blood, and pointed out that the venous blood could not circulate through the arterial system without becoming a most deadly poison. He then described asphyxia, resulting from suffocation—and demonstrated that the cause of that condition was the prevention of the passage of oxygen into the lungs, in order that the blood might be arterialised. He next demonstrated, that man was formed for breathing a gaseous atmosphere; and that, though water contained air, yet man could not separate it for respiratory purposes as fishes do. In describing the diving dress, the lecturer gave some most interesting details, proving that, unless the head and chest of the diver were protected by the strong encompassing helmet, the weight of the water would prevent him using the muscles of respiration—for, calculating that half a square foot of the chest be exposed, the weight upon that surface, at the depth of 15 feet, would be 450 lbs.

**ARMAGH, COLERAINE, AND PORTLUSH RAILWAY.**—A meeting of scrip-holders in this company was advertised to take place at the offices of the Messrs. Phillips and Son, 28, Lawrence Pountney-lane, on Tuesday last—when but few persons attended, and some gentlemen (who were present) were not holders, but appeared for others without legal proxies, and consequently could not vote. A very few hundred scrip, at most, could have been represented, excepting a list which Mr. Phillips held in his hand from country holders, to the extent (he stated) of 2000 scrip, who were determined to endeavour, by all legal means, to obtain the entire return of their deposits. The chair was taken by John Carter, Esq., who observed, that the meeting had been called to take the sense of the proprietors who might attend, on the propriety of demanding from the directors the return of the whole deposit of 12 7s. 6d., instead of 11, as offered by them: they had subscribed to the undertaking, under special agreement, for the going to Parliament, to endeavour to obtain an act for the construction of a particular line: the directors had neglected to take the necessary steps,—and, as they had now thought fit to amalgamate (as it appeared they had) with a company of which he knew nothing, and without any application to the shareholders, he thought they were entitled to the return of the whole of their deposits.—This led to a protracted and most unbusiness-like conversation (for discussion it could not be called), which lasted nearly two hours—during which, a motion for the appointment of a committee was moved by Mr. Palliser, seconded, and said to be carried—but it afterwards turned out, that the mover was not a proprietor, and (of course) the motion fell to the ground. Mr. Phillips, however, with the consent of the chairman, recorded it as having been moved, seconded, and carried (no names).—"That a committee of three be appointed, to demand of the directors the return of the whole of the deposits,—and that they report the result to an adjourned meeting, to be held that day fortnight." A vote of thanks to the chairman was then carried, and the meeting separated.—However blameable the directors may have been, for deciding on so important a point as an amalgamation, without an appeal to the proprietors, it is but justice to observe, that a strong feeling is prevalent that it is the best step which could be adopted. This line, and the Dublin, Belfast, and Coleraine Railway, run through the same district of country; and if both went to Parliament, a severe and expensive opposition must have been the result: it was, therefore, decided to lay both surveys before an eminent and disinterested engineer—Mr. Rastrick was chosen; and, after 11 days' consultation and inspection by both parties, with the engineer, they were both found to possess merits and defects so equally, that one circumstance alone, and that an important one, governed the decision. Both lines run through land belonging to the Mercers' Company, who stated that, if the Dublin line was decided upon, they would support it; but if the Armagh, Coleraine, and Portrush, was adopted, they would give their most decided opposition, as it went through a portion of land which they could not agree to have dismembered. The Dublin, Belfast, and Coleraine line, therefore, goes to Parliament with the interests of both companies—the deposits of the Armagh Company having been handed over to the Accountant-General, in their joint names; and, should the undertaking be proceeded with, it will, doubtless, be a paying line.

**RAILWAY BILLS.**—The following is an account of all railway bills, which have been reported to the House of Commons during the present session, with a statement of the maximum rates of charges and fares for goods and passengers, respectively authorised by such bills. The document contains 138 bills, made up to the 29th of May. From an examination it appears, that in the first class the highest sum per mile to be charged for passengers is to be 3d., and the lowest in the same class 2d.; whilst in the third class the charge is to be 1d. and 1½d. In the second class the charge in some instances is to be 1½d., and in others 2d. a mile. On some of the railways, when the speed is more than 25 miles per hour, an additional ½d. is allowed in the first class. The charges in some of the bills, reported during the present session, are to have reference to former acts. In the Great Western bill no provision has been made with regard to charges of any description.

**THE RISCO CHARITY.**—A meeting of the committee—who so kindly and zealously interested themselves in raising a provision for the widows and orphans of the colliers who fell victims to fire-damp, in January last—was held on the 12th inst., at the Risco office—John Russell, Esq., in the chair; on which occasion the preliminary arrangements were entered into for the protection from want of the most necessitous objects, by a weekly allowance. A committee of management was formed, to allocate the annual sum accruing from the interest of money invested in the Savings' Bank to the best advantage, and the most deserving applicants. On the closing of the accounts, which will shortly take place, we shall give a complete list of the subscribers, and the particulars of the final arrangement.—*Monmouthshire Merlin.*

**LORD LONDONDERRY'S COLLIERIES.**—Never was there a time when the coal-trade of Seaham Harbour was in such a high state of prosperity as the present. The number of men connected with the works of the harbour have been increased, so that coals may be shipped with greater expedition. While many of the collieries in the neighbourhood are doing little or nothing, the whole of the collieries belonging to the Marquis of Londonderry are working 12 days in the fortnight.—*Sunderland Herald.*

It is stated that 2000l. worth of gunpowder has been spent in the blasting of one cutting, near Kirtall, on the Leeds and Bradford Railway.

**HOLLOWAY'S OINTMENT AND PILLS IN NEWFOUNDLAND.**—Chas. Thorne, Esq., merchant, of Harbour Grace, had a bad leg, of a fearful nature, and long duration, for which the medical aid of the island afforded no relief; whereupon he determined on proceeding to England, to try if it were possible to get it soundly healed; but, as a last resource, and before adopting such a course, he used Holloway's pills and ointment, which speedily effected a cure of his leg. The particulars of this surprising case were received by last packet, from Mr. Spry, proprietor of the *Mercury* newspaper, Carbone, Newfoundland. These celebrated medicines, which are sold at Professor Holloway's establishment, 244, Strand, London, and by every dealer in medicines, will cure all skin diseases, wounds, sores, and ulcers.

## POLKINGHORNE'S PATENT METHOD OF TREATING

TIN ORES. Messrs. POLKINGHORNE & CO. beg to acquaint ADVENTURERS, and OTHERS interested in TIN MINES, that they have just obtained HER MAJESTY'S LETTERS PATENT for the SOLE USE of a COMPOUND SOLUTION, effectually to CLEANSE TIN ORE from all extraneous metals—thereby increasing its value from £2 to £4 per ton.

Messrs. P. and Co. are NOW READY to SUPPLY the article from their manufactory, COPPERHOUSE, HAYLE, CORNWALL, in casks of 10 gallons each, which quantity is sufficient for a ton of ore.—Price 10s. per cask, and license 5s. per ton of ore.—N.B. Every information can be obtained by applying at the patentee's offices, 19, Clement's-lane, London.—April 4, 1846.

**THE PATENT SAFETY FUSE.** FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and MOST EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this." Manufactured and sold by the Patentees, RICKFORD, SMITH, and DAVEY, of Exeter, Cornwall.

## PATENT IMPROVEMENTS IN CHRONOMETERS.

WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 g. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 g. to 12 g. each. DENT'S PATENT DIPLÉSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing description and directions for its use 1s. each, but to customers gratis.

## SEYSSSEL ASPHALTE COMPANY—CLARIDGE'S

PATENT.—ESTABLISHED MARCH, 1838. FOR WORKING THE MINERAL ASPHALTE ROCK OF PYRMONT SEYSSSEL, A Bituminous Rock, situated on the Eastern side of the Jura.

PRINCIPAL DEPOSITS: ROUEN, MARSEILLES, AND STANGATE, Surrey Side of Westminster-bridge, London.

The ASPHALTE OF SEYSSSEL has been EXTENSIVELY USED, since March, 1839, for the following useful purposes:—

FOOT PAVEMENTS (public and other)	MALT-HOUSE FLOORS
KITCHEN FLOORS	FIGGERIES, &c.
BASEMENTS—where it is essential to keep	COVERING OF RAILROAD AND OTHER
GARDEN WALKS AND TERRACES	ARCHES
CARRIAGE DRIVES	The only effectual mode to prevent the
COACH-HOUSES AND STABLING	percolation of water, which also renders
DOG KENNELS	it very appropriate for the
BARN FLOORS	LINING OF TANKS, FISH PONDS, &c.
TUN ROOM FLOORS	DRAINS, &c. &c.

Note.—The Seyssel Asphalt Company are prepared to enter into special contracts for the execution of railway work, and other public works of magnitude.

I. FARRELL, Secretary, Seyssel Asphalt Company, Stangate, London.

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